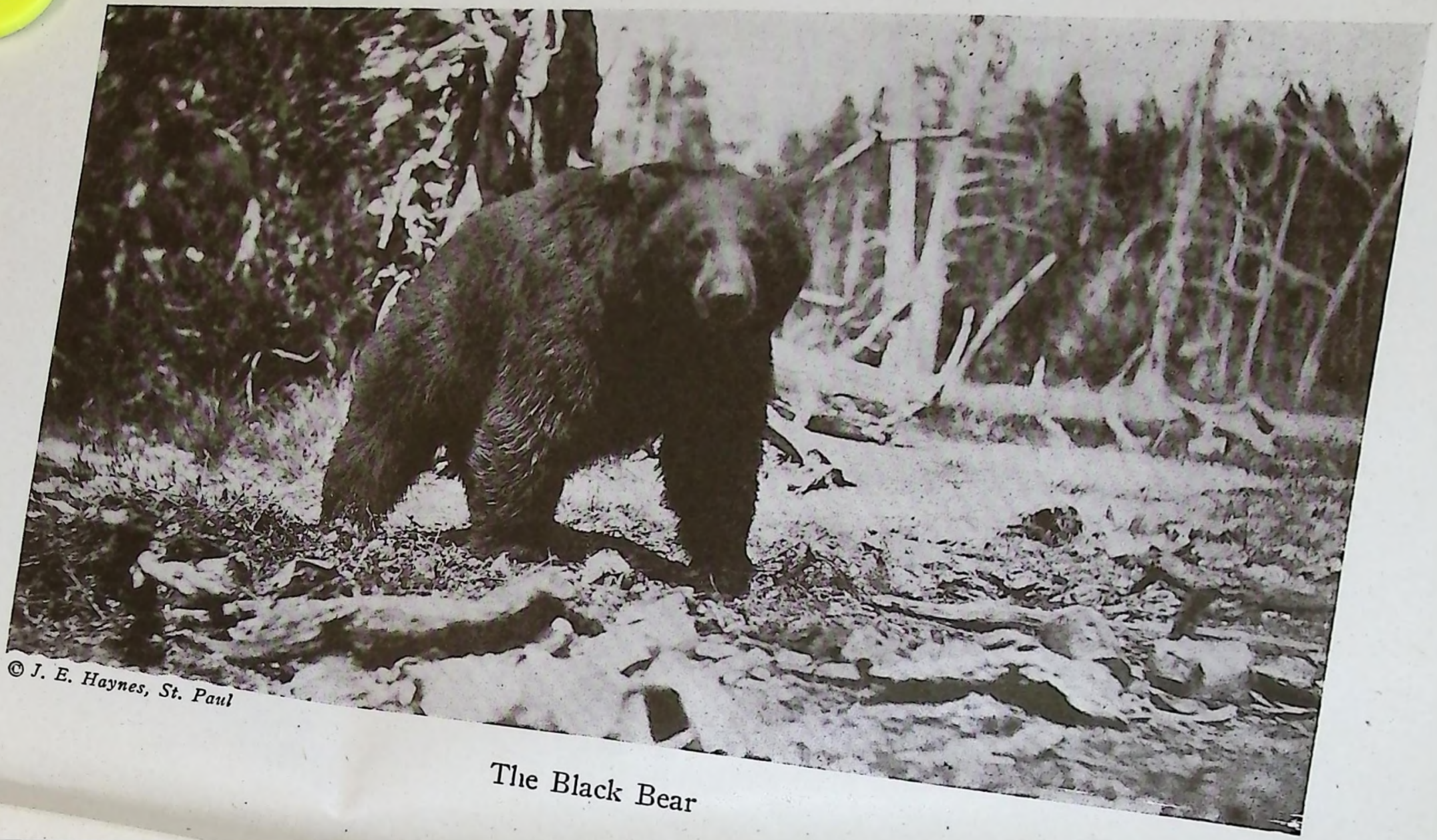
Bears in the Yellowstone

by

M. P. Skinner

A-400

BEARS IN THE YELLOWSTONE



© J. E. Haynes, St. Paul

The Black Bear

BEARS
in the
Yellowstone

BY

M. P. SKINNER

Roosevelt Field Naturalist, Roosevelt Wild Life
Forest Experiment Station
Author of *The Yellowstone Nature Book*

CHICAGO
A. C. McCLURG & CO.
1932

Copyright
A. C. McClurg & Co.
1925

Copyrighted in Great Britain

Printed in the United States of America

PREFACE

MANY years ago, I went to the Yellowstone National Park. It was my first visit. I enjoyed it so well and found its delightful wilderness so clean, so healthful, and so enthralling that I returned again and again, and at one period lived there for fifty consecutive months. Since its natural wonders and its wild life were entirely responsible for the greatest interest of my life, I have always wanted others to enjoy its blessings as much as I have. If my writing has contributed even an infinitesimal atom towards a similar pleasure in others, I am well repaid.

Because of the great interest manifested in the bears in the Yellowstone Park — and other National Parks: Glacier, Mt. Rainier, Crater Lake, Yosemite, Sequoia, Rocky Mountain, and Mt. McKinley, which are the only places where these animals can be seen at close range by the average man and woman — and the fact that we have had no book describing their habits and customs, I have tried to use these animals as an example of the wealth of material there is in our National Parks for nature lovers.

In making this effort I am deeply indebted to the National Park Service, Superintendent Horace M. Albright, Chester A. Lindsley, and Dr. Charles C. Adams

for the loan of reference books. Dr. Adams has also loaned me six copyrighted illustrations from The Roosevelt Wild Life Forest Experiment Station bulletins, and given me many suggestions on the preparation of my material. I am also grateful to the various wild-life lovers, indicated below each cut, who have furnished photographs for illustrations.

M. P. SKINNER

Syracuse, N. Y.

CONTENTS

CHAPTER		PAGE
I.	Why Yellowstone Bears Are Famous	1
II.	What Bears Do in the Wilderness	14
III.	The Grizzly's Undeserved Reputation	36
IV.	What Bears Eat and Drink	45
V.	How Bears Live	69
VI.	The Long Winter Sleep	99
VII.	Mother Love and the Cubs	109
VIII.	Bears and Their Enemies	119
IX.	What Bears Look Like	128

ILLUSTRATIONS

	FACING PAGE
The black bear	*Frontispiece*
Black and brown bears at the Canyon bear pile	4
Black bears and two cubs	5
Making friends with man	18
Elk calves hiding in brush	19
Big, black mountain raven	22
Ravens disputing with bears at feeding grounds	22
When walking slowly bears carry their heads low	23
Most bears walk with a shuffling gait	23
This bear is in a bit of hurry	26
Black bear going to eat	26
Climbing bear showing flat-footed gait	27
Bears take advantage of every limb	27
Bears climb pretty much like a lineman	30
Bear walking up leaning tree much as he would a hill	30
Shows how bears depend on their rear claws	31
Taking a bath	34
A well-worn bear path	35
Bear taking a mud wallow	42
Disturbed	42
A camp foraging bear	43
Sea gulls flying nervously around	50
Sea gulls settling down for food	50
Ground dug up by grizzlies	51
Grizzly tearing open a rotten log	51
Bear mother brings her cubs to camp	54
Carrying away a prized ham or bacon skin	54
Bears are individualistic	55
Children of the wild visiting at Mammoth	55
Ground squirrel	62
Bear digging up a ground squirrel	62
Bears like sweets	63
Stump torn to pieces by grizzlies	63
Feeding ground	66

Good things to eat and drink..... 67
Young bears very frequently sleep on trees..... 74
Grizzlies do not appear until dusk..... 74
Bears use convenient trees for sightseeing..... 75
Asleep on a limb..... 82
Sometimes bears sleep standing up on a limb..... 82
Yearling cubs asleep on pine..... 83
Bear resting astride a limb..... 83
The hold-up bear of the Yellowstone..... 92
The bandit at work..... 92
Willing victims of the holdup..... 93
In late summer most bears become ludicrously fat.... 104
They are also restless and make long trips..... 104
This little fellow scampered up a tree..... 105
Twin cubs about nine months old..... 116
A male bear leads a lonely life..... 117
The mother and cubs stay and live together..... 117
Mother and two cubs..... 124
Fur of the black bear at its best..... 124
Pair of grizzly twins..... 125
"Teddy" 125
White breast mark..... 132

"This whole episode of bear life in the Yellowstone is so extraordinary that it will be well worth while for any man who has the right powers and enough time, to make a complete study of the life and history of the Yellowstone bears. Indeed, nothing better could be done by some one of our outdoor faunal naturalists than to spend at least a year in the Yellowstone, and to study the life habits of all the wild creatures therein. A man able to do this, and to write down accurately and interestingly what he had seen, would make a contribution of permanent value to our nature literature."

THEODORE ROOSEVELT,

Bears in the Yellowstone

CHAPTER I

WHY YELLOWSTONE BEARS ARE FAMOUS

THE tendency nowadays to wander in wildernesses is delightful to see. Thousands of tired, nerve-shaken, over-civilized people are beginning to find out that going to the mountains is going home; that wildness is a necessity; and that mountain parks and reservations are useful not only as fountains of timber and irrigating rivers, but as fountains of life. Awakening from the stupefying effects of the vice of over-industry and the deadly apathy of luxury, they are trying as best they can to mix and enrich their own little ongoings with those of Nature, and to get rid of rust and disease. Briskly venturing and roaming, some are washing off sins and cobweb cares of the devil's spinning in all-day storms on mountains; sauntering in rosiny pine-woods or in gentian meadows, brushing through chaparral, bending down and parting sweet, flowery sprays; tracing rivers to their sources, getting in touch with the nerves of Mother Earth; jumping from rock to rock, feeling the life of them, learning the songs of them, panting in whole-souled exercise, and rejoicing in deep, long-drawn breaths of pure wildness. This is fine and natural and full of promise.[1]

And what is finer, more natural, and contains more promise than the pursuit and study of the abounding

[1] MUIR, JOHN. *Our National Parks.* P. 1. Houghton Mifflin Co., Boston. 1901.

wild life of the Yellowstone National Park? Especially full and rich in promise are the bears, both black and grizzly; for bears in the Yellowstone are the most easily observed of all its larger animals. And furthermore, they are interesting because each bear is a study by himself. Just because we have seen one bear doesn't mean that we know them all. For each bear has certain individual ways and traits of his own, a fact unsuspected by most people. It was first brought home to me by two black bear cubs belonging to the same litter. Born together, having the same mother, and always traveling, eating, sleeping, and living together, they had seen exactly the same life and had exactly the same training and experience. Yet one was cheerful and obedient while the other was sullen and morose. When their mother sent them up trees, the one was prompt and always up first, while his more sullen brother required a second command and an occasional cuff on the ear. When the mother called them down again, the cheerful one always responded first and so promptly that he was down soonest even though he may have started from the top of the tree.

One showery day as I was riding along the Yellowstone River near the Grand Canyon of the Yellowstone, I passed a solitary camp almost hidden in a pretty glade amongst the trees. It was an attractive place but at the time there was no one about that I could see. Still the flap of the tent was half open, and although it was not raining just then, it might begin soon. As I debated

whether I ought to go and close it, a small black bear came waddling ludicrously out on hind legs, and clasped tightly in his arms was a beautiful sack of flour, at least he seemed to think it so, and he carried it proudly to the side of the tent and set it down. Immediately, he went inside the tent again and brought out another sack which he set beside the first one. Then he squatted down on his haunches to gloat over his prizes. Not for long, however. Somehow he seemed to feel he wasn't getting all the fun out of the occasion that he ought to have. So he reached over one paw and grasped the first sack by its top and held it dangling just above the ground, while he drew his claws down through it, and I could fairly hear him chuckle with glee as the flour cascaded out from the slit bag in four wonderful white streams. When the bag was empty, he threw it aside and reached for the second sack which he treated just as he had the first one. For a time the falling flour fascinated him. Then he began stirring the piles about tentatively with one paw, until by chance some of it fell into a small puddle of rain water. This started a new train of thought in bruin's brain, and soon he had a fine white bed of wet flour. Then he rolled in it and plastered himself well with the white, gluey mixture. And just about the time he was good and white, the campers came back and put him to flight. After such an escapade I quite naturally thought that would be the last I should see of that bear. But he was bent on achieving more publicity. My own tent was about a mile away and close beside

another in the edge of the public auto camp. About midnight I was awakened by the most blood-curdling yells from my neighbors' tent. The cries were so unearthly and so filled with terror that I rushed out, prepared to battle for my life. My neighbors were southerners and had brought their own negro cook with them. The old fellow was a good cook but somewhat given to gambling. Strangely enough his employer had scolded him that very day and threatened to sick a bear on him if he played again. The old negro was superstitious and one can imagine his feelings when he looked up from an enticing crap game to see a huge white form—"a ghost-bear," he called it—coming into the tent with every indication that he meant "to get that nigger."

Now there are not many of us that have ever had a "ghost-bear" after us, but most visitors to the Yellowstone usually see some bears. Everyone has heard of the free-and-easy, friendly bears that are to be seen on every hand. At the present time there are about a hundred and fifty black bears and forty grizzlies in the Yellowstone National Park. Probably there were never very many more than that, for this number is abundant for the territory considered, as bears need lots of "elbow room." The greatest number I have ever seen at one time, was on August 2, 1916, at the Canyon feeding station where I had twenty-nine in sight. In spite of this confidence in man about the regular feeding grounds and established camps, all the bears, especially the grizzlies, act quite differently when away from those places.

© J. E. Haynes, St. Paul

Thirteen black and brown bears at the Canyon bear pile

Photograph by M. P. Skinner

Black bears and two cubs. The cubs take to the trees when the mother thinks there is danger

Out in the wilderness that covers so much of the Yellowstone National Park, they are just as wild, just as cautious, and just as difficult to find as bears are anywhere else.

Such an interesting animal, so easily seen; arouses a great deal of interest on the part of visitors to the Yellowstone National Park. From my own inquiries and investigations among the tourists they rate the attractions as follows: geysers, first in importance; canyon, second; and bears, third. Mr. Edmund Heller gives the bears even greater prominence when he says:

One may have a preconceived idea that people who visit the Yellowstone National Park center their interest on the geysers that spout and play and fill them with awe by their wonderful hydraulic effects. Nothing, however, is farther from the truth. The summer tourist is probably most fascinated by the sight of the two species of Park bears. The black or brown bear is a friendly animal and is a never-ending source of wonder and amusement; and the shy but powerful grizzly expresses in every movement an alertness and a spirit of independence that instantly commands respect. The tourist's conversation follows the promptings of his heart, and bear talk flows from his lips far oftener than any regarding the geysers or other inanimate objects.[1]

Therefore it is very conservative if we rate the bears as twenty per cent of the Park's interest. Personally, after seeing the eagerness and interest of the bear-seekers, I should put it at double that; but twenty per cent, or even only ten per cent, is enough for my purpose.

[1] *Roosevelt Wild Life Bulletin,* Vol. 2, No. 4, February, 1925.

In 1924, Yellowstone had 144,158 visitors, of whom 41,054 spent over $2,052,700.00 within the Park, and the remaining 103,104 tourists, who were camping, over $1,020,000.00 during their stay. In addition to these figures, each of the 144,158 visitors spent an average of over $44 on railroads, automobiles, and other traveling expenses or $6,342,952.00; a grand total of $9,415,652.00 or $65.31 per person, for the season. Ten per cent being due to the bears makes each person spend $6.53 to see from one to fifty wild bears during the four days of his visit. The expense charged against the bears should be ten per cent of the Park's maintenance, or $33,680.00. Or, if you prefer it that way, a clear balance of value over cost of $4,778.34 for each one of the one hundred and ninety Yellowstone bears per year.

Probably the average tourist concludes these are tame bears brought here and turned loose by the authorities for the pleasure of the visitors. At least, one thinks that these bears *must* be different from the ferocious fellows we all hear so much about in our youth. But there is actually nothing so strange about the Yellowstone bears after all. When the Park was first discovered the bears were just like other bears in every wild and remote section. Laws did not protect them then and they were hunted and shot on every pretext.

George W. Wingate, who visited the Yellowstone in 1885, has little to say about its bears beyond what might have been said of any part of the Rocky Mountains.[3]

[3] *Through the Yellowstone Park on Horseback*. Orange Judd Co., New York. 1886.

Neither did Francis C. Sessions, who apparently made the trip in 1888 or 1889, say anything unusual about its ursine population.[4] Hence it seems reasonable to suppose that bears were not a marked feature there before 1890 because of the hunting previously allowed. Nevertheless, a new regime had actually begun in 1886 when the military were called in to protect the Park. The former guardians had been very lax but now the commanding officer absolutely stopped all shooting in the Park. The effect was astonishing. Bears were intelligent and it did not take them long to discover the new order of things. Now I do not wish to be understood as implying that the bears know what the Park is, where the boundaries are, and why they are safe within it. That would be asking too much of even the most sagacious of animals. But unquestionably they have found out that, for some reason unknown to bears, in the Yellowstone they are safe from man and all his works. They, together with the other Yellowstone animals, accept this as a fact and come out and make friends with man, elsewhere their worst and most to be feared enemy. Even the shrewd, cautious grizzly accepts conditions as he finds them and comes carefully out to feed.

As early as 1889 black bears had begun to frequent the garbage piles but were still few. They came only at night, and were so extremely wild that they were not seen. By 1890 they had increased to such numbers that

[4] *From Yellowstone Park to Alaska.* Welch, Fracker Co., New York. 1890.

the authorities considered killing them off, apparently without giving any weight to their importance as attractions for the tourists. Fortunately, the tourists themselves began to see black bears in numbers and quickly made known their intense interest in these great, lumbering animals. As this interest on the tourists' part became more and more evident, the bears assumed their place as one of the Yellowstone attractions. The black bears were the first to appear, and it was not until three or four years later that the more wary grizzlies followed their example.

In the first edition of his wonderful book, written in 1895, General Hiram M. Chittenden says:

> Bruin generally accommodates him [the tourist]. The fine instincts of that intelligent brute have shown him that it is much easier to get a living from the refuse about the hotels than to forage for it in the wilds of parsimonious nature. Nightfall, therefore, always brings him about to the great delight of the game-seeking tourist. The incidents of each season to which these bears unwittingly give rise are among the amusing features of tourist life in that region.[5]

My own experience with Yellowstone bears began on my first trip in 1895 when I found them common enough at all points except Mammoth. At first it was only in the upper Park that the bears were seen, but by 1910 black bears began to appear near Mammoth and slowly increased year by year. Every season now, I see large

[5] *The Yellowstone National Park.* The Robert Clark Company, Cincinnati. 1895.

numbers of both black bears and grizzlies, and the more I see of them, the more I am amused by their mischief and their curiosity, entertained by their shrewdness and sagacity, and astonished by their intelligence and skill in meeting changing conditions.

What a marvelous change from the bears of story-book and hunter! Where were the unruly, blood-thirsty brutes of which I used to read such fearful tales? Surely these great Yellowstone bears belonged to a different world. Here, they were amusing enough and interesting enough, but obviously they were not dangerous. Since the early nineties, thousands upon thousands of tourists have seen these Yellowstone bears, not only once, but many times. Not only have they seen them, but they have camped among them, fished among them and hiked among them. And yet there are no records of any hurt or any fright to any tourist except where the bear was encouraged to grow too familiar, was actually being molested, or had reason to think he was about to be molested. For many years, at the request of the authorities, I investigated every case of accident with a bear, and not once in all that time could I place the blame squarely upon the bear. In a few cases the person had not *intended* to molest the bear, but even in these instances I felt that the bear had just cause to think that he was.

What of the great, gray, grizzly fellows, the reported scourge of the western plains and mountains? We are beginning to feel that this wonderful animal has

been greatly misunderstood and misrepresented. Instead of a raving monster eager to maim and destroy every living thing, we, in the Yellowstone, know the grizzly as a peaceful, self-respecting animal that asks only to be let alone. And we have found that if he is let alone, he rewards us with many an interesting scene and many amazing instances of the marvelous intelligence and agility of this most interesting, to me, of all animals. But if we forget *our* good manners and either tease or molest this monarch of the forest, then the scene rapidly changes. For once aroused, the grizzly is a fearful antagonist indeed. And no visitor to the Park should forget for an instant that both the grizzlies and the black bears here are wild bears, quick to resent any seeming unfairness or any undue familiarity.

I remember well the first bear I ever saw in the Yellowstone. I had heard how tame bears were and how easy they were to find. Yet, knowing the extreme timidity and caution of the animal elsewhere, I could hardly credit a half of what was told me. So when the clerk at the old Fountain Hotel — Lower Geyser Basin — told me on July 3, 1895, that I would be sure to see several bears if I went out to the scrap pile but a few hundred feet behind the hotel, I was still inclined to feel there must be some catch in his statements. Fortunately, I did finally go out. I found a dozen other people there, and one hotel employee who repeatedly assured us the bears were coming out and that we would be sure to see them before long. Soon, I did see a small, faint shadow

among the trunks of the pines. I do not know how it got there, nor where it came from, but there it was. Small and indistinct to be sure, but nevertheless a real, live, wild bear. Shortly after that, this bear, a brown one, began moving among the trees and gradually grew larger and larger. To my excited eyes he now seemed as large as a cow, but he really wasn't a big bear after all. However, he was plenty big enough for me then as he slowly approached the garbage. He didn't hesitate in his walk nor in attacking the feast, and he paid absolutely no attention to us although we were in plain sight less than a hundred feet away. He was not at all dainty at first, but ate everything as it came; but as soon as the edge wore off his appetite he became more particular and used first one fore paw and then the other to brush away the top material so that he could find the tidbits underneath. Occasionally he pushed the undesired stuff aside with his nose. I thought him very careless and indifferent but I soon found his senses were keenly alert. He hadn't been eating more than a few minutes when he suddenly whirled around, and rising on his hind feet, stared fixedly somewhat to the left of where he had first appeared. *We* could see nothing although the hotel employee remarked that there was probably another bear coming. A minute or two later we did see another bear coming, about the same size as the first but jet-black in color. As the second bear came well into sight the brown one dropped to all fours and resumed feeding. The black bear came up and in spite of being greeted at

first with many low growls, he was soon eating his share too. Nothing happened for five minutes except the steady "chop-chop" of the feeding bears. Then a tremor of excitement ran through the tourists as a bigger black bear came into sight. For a moment I rubbed my eyes in astonishment, but yes, there they were: one—no, *two*—small, black, roly-poly balls of cubs following discreetly in her rear. She came on very slowly, stopping here and there, to smell first one thing, then another, and each time she stopped the two cubs came rushing up to see for themselves what mother had found. Although their curiosity was intense, it never lasted long. As the old bear entered the open where the garbage was, she suddenly rose on her hind feet and caught sight of the other bears. But as she rose, the two cubs, clever imitators, rushed up beside her and rose on their feet, one on each side. It was a pretty picture. For all the world like a human mother and her two children holding to her apron corners. But it was a picture that changed quickly when she dropped to her feet and coughed out a "koof, koof." The youngsters did not hesitate a moment but dashed madly up a nearby sapling, and when they were well up the tree, the mother moved on towards the garbage. The first two bears did not wait for her to come up but decamped at once, although they did not go more than a hundred feet before they sat down to wait. The big mother bear ate for about fifteen minutes and then went back to her waiting cubs who had meanwhile climbed to the very tip-of the tree about twenty-five

feet from the ground. When she reached the foot of the tree, she called them and they began to climb down at once and soon reached the ground; then the whole family moved contentedly off among the trees. I remember I was greatly impressed with the obedience of those little bears. When their mother told them to climb that tree, they did it at once; and when she called them down, they were even prompter. Later I found there was an excellent reason for it, for it is "quite the thing" in the bear woods for a mother bear to spank her disobedient cubs. And, as she lays it on right good and hard, in spite of their squeals, they remember it.

CHAPTER II

WHAT BEARS DO IN THE WILDERNESS

PROBABLY the first thought that occurs to each of us is what do the bears do to all the myriads of Nature's other children. Unconsciously we react to old tales and nursery rhymes and assume that a bear's relation to other animals is solely as a hunter and a killer of them. But these Yellowstone bears teach us that this is true only to the extent that they kill and eat small creatures like snakes, frogs, mice, chipmunks, ground squirrels, and woodchucks, regularly and whenever they can get them.

I have seen these great bears out on the open hilltops or shuffling along through more or less open forest. Most of the time they were cropping plants or other herbage, but at the most unexpected times they changed and began to turn over stones and logs. The smaller stones they turned over quickly with a single quick flip of their great paws inserted under the nearest edge so that the rock would fly out and away from their noses. As each stone went over, bruin thrust his muzzle down into the cool earth hollow and his long tongue soon gathered up all its inhabitants — ants, grubs, worms, small reptiles, and even mice and their nests. Stone-turning was an extremely interesting thing to watch;

there was no lost motion, no wasted effort; indeed, a kind of technique had been developed that would delight the soul of an efficiency expert. Most of the turned stones I have seen were in the open, not only because more conspicuous for me to see, but also because more insects withdrew there from the fierce heat of the upland sun, or at least so I believed. A man tugging at a stone or a bowlder invariably pulls it towards him to the imminent danger of his shins and toes. But his ursine majesty did not. The grizzly used either right or left paw as occasion warranted, but he lifted the nearer edge and with a broad outward sweep sent it over and away. The grizzly used only one claw, like a long finger, for even the largest stone, but the black bear used its whole paw. The larger rocks and logs took both paws and often bruin would tug and worry at some deeply imbedded bowlder until sometimes I have seen him lose his grip and roll merrily on his back; but once I saw him angrily spring up and deal the recalcitrant rock a sharp slap with his great paw. Sometimes he scared up mice or chipmunks from their hidden, suddenly exposed homes. Then he danced about with clumsy agility after the scurrying inmates until finally he scooped them into his mouth. At times when he was still more clumsy, or irritable, he struck them flat with a blow of his great paw. Occasionally, possibly when he smelt a mouse, he would lift the stone with one paw while he held the other up ready to strike. Stoneturning seemed to be one of the first tricks taught the cubs; and as they learned, first

they rushed in under mother's stone, but very soon learned to turn their own, although I have often seen one mischievously duck under his brother's arm before the latter could recover. Then there was sure to be a tussle, half-boxing and half-wrestling; but it never took long for good humor to return and away they would scramble for the next stone.

The larger wild animals are usually let alone by bears, who are by nature rather lazy and averse to the exertion required of a killer; but there are a few who become meat-eaters and these will kill deer, elk, and even moose when opportunity offers. That it is not a universal habit is well shown by the attitude of other animals toward bears. Deer have even been known to have their homes in the same thicket that contained the lair of a bear. On one occasion I was out on the antelope range in hilly country in the Yellowstone Park. As I ate my lunch, I noticed a black bear and two cubs on an open slope busily engaged in turning over stones; I paid them little attention until five antelope, two does and three half-grown kids appeared, coming up the slope toward them. It was quite evident that the antelope saw the bears and were keenly curious. They advanced slowly until within about a hundred and fifty feet, and then drew nearer but more cautiously still. As the antelope got closer, curiosity would, at times, be overcome by natural timidity and the dainty creatures would suddenly wheel and dash off with the speed of the wind. But they never went far and always returned a little closer than before so that

after about seven "stampedes" they were within fifty feet of the bears still busily turning over flat stones. Here the antelope stood in a row for fully five minutes, the personification of inquisitive curiosity. Then, curiosity satisfied, they went to cropping the grass and other vegetation, paying no further attention to the bears. During the entire performance the bears were totally indifferent except to glance up momentarily each time the antelope dashed away.

Even the great, gray grizzly is not habitually the ferocious killer of other animals that we unconsciously deem him. Nothing could be further from the truth. To be sure he eats other animals, but he generally finds them dead, and it is only under stress of hunger that he kills anything larger than squirrels or woodchucks. Yet if the occasion arises, he can become a hunter more particularly of such huge beasts as elk, moose, and bison; but such animals as antelope, mountain sheep and white goats probably escape altogether, being too swift and agile for the mighty grizzly. I have always thought this immunity due more to pure unwillingness of bruin to exert himself than to actual physical inability. I have seen antelope watch with curious interest a grizzly digging ants, but I could not see that they exhibited any fear whatever at his proximity, although they would not allow a wolf, or even a coyote or fox, to get anywhere near that close. Grizzlies do manage to kill a few deer in favorable places; for I have occasionally found their carcasses in willow thickets and alder bottoms where

their destroyer probably leaped upon them before they could escape, but as a rule, deer are as totally indifferent to a grizzly's presence as they are to a black bear's. In the old days on the plains, "Old Eph"—as a grizzly is sometimes called—hunted the buffalo, but even then he was more apt to prowl about the herds, picking out a straggler or a weak animal, or driving the wolves from their kill. But if such easier prey did not chance his way, he showed no scruples against attacking and killing even the mightiest bull in the herd, although such a battle must have been a rare thing indeed.

At the present time, the elk is about the only one of the large animals likely to fall a prey to the grizzly, as they both inhabit the same places. Since the elk is both less agile and keen to avoid the huge bears than the deer is, it would be more attractive as a quarry. While most grizzlies are largely vegetarians and hardly know what animal food tastes like, I have seen many elk partly eaten by bears but in the majority of cases the elk was dead when the bear found it. Only in the spring of the year have I ever known any actual killing. Then, about two to four weeks after hibernation, Old Eph is very lean and very hungry, and since the elk are weakest then after the long winter, he occasionally catches one. In June, when the female elk are calving, I often find the grizzlies down in the sage and willow thickets where I have sometimes seen them find and kill the young calves. But, as it is only two or three weeks before the little fellows are strong and expert enough to escape, the dam-

Photo by Miss Dina Rees Evans

Making friends with man

Photograph by M. P. Skinner

Photograph by M. P. Skinner

Elk calves hiding in brush

age done to the elk herds is not very great. Although a big bull elk at his prime in the fall rutting season would be an antagonist not to be despised, I have never heard of such a fight taking place. It would not be natural for the then fat and lazy grizzly to make the attack.

A bull moose is an even more formidable fighter, and yet the grizzlies do kill a few. Generally, as with the elk, the killings have taken place in the spring when the moose were at their weakest. At that season they were quite apt to be on the river bottoms and in the willow thickets. Then, if the bears come out before the snow is gone, they attack the moose on rare occasions, especially if hungry and unable to find other food. These moose-killers usually lay in wait in the densest thickets, and by a quick rush, surprise their prey. If the rush secures a hold, the prey is practically doomed to death by a broken neck, or torn to death by the terrible claws.

Since the bull moose is larger, more powerful, as well as more crafty and more agile than the elk, I doubt if one is ever attacked in the summer or fall. Certainly such a battle would be a terrible one indeed and the outcome uncertain, but I have never heard of such a thing, and never found any evidence of a battle field, or ever found any written account of one. But so rare is big game killing of any kind in the Yellowstone that frequently months pass without our hearing of any such fatality.

On the other hand, in my own experience, I do not know of a single instance of a bear making friends with

a wild animal, although there are several records of a bear being friendly with a dog, and a few with other tame animals. True, I have occasionally seen coyotes near black bears, especially when the latter were devouring carrion or kitchen scraps, apparently to pick up tidbits from the feast. On the other hand, bears will drive coyotes and other animals from their kill, and appropriate for themselves whatever is left. Again, a black bear will sometimes wait until a mountain lion, or a wolverine, has made his meal and then clean up the remainder. But Mr. Enos A. Mills says he has seen a black bear and a wild coyote playing together twice.

I once had a large, white English setter, a beautiful, intelligent animal that went with me everywhere. And so, when I visited the Yellowstone Park, "Patch" went too. Although big and powerful, and a savage fighter when aroused, he was playful and very good natured, at peace with all animals.

One day, as Patch was romping by himself in front of the Lake Hotel, a brown bear about seventeen months old, but rather small for his age, made his appearance. And soon the big white dog and the wild bear were playing together in perfect friendliness. One would rush at the other, growling or barking as the case might be, and would soon have him in retreat; the next instant the position would be reversed and the pursuer would become the pursued. Neither one ever offered to hurt the other although they played together for hours each day for a week or more.

The grizzly is like the black bear, seldom associating with animals of any kind, but for a very different reason. The black bear's temper is so uncertain, and his disposition so treacherous, that it is uncomfortable, to say the least, for other animals to be anywhere near him. But the grizzly seems to be indifferent, to be so self-sufficient that he has no need of companions, although normally his disposition is even and calm enough to permit "a grizzly bear and a little porcupine feeding side by side on the grass near the snow banks."[6] But the Yellowstone grizzly has one quite frequent associate and that is the big, black mountain raven. Perhaps the raven likes the scraps from bruin's feast, for I often see him following these bears, sometimes even flying over the forest while Old Eph walks along below. Once when riding across the comparatively open Hayden Valley, my attention was attracted by a flock of ravens, a dozen on a small clump of pines and thirty-eight more circling and spiralling only a little distance above. I had found ravens a good deal like their smaller cousins, the crows, in that wherever they congregated there was something interesting going on. So I rode over; and there, asleep on a warm hillside, amid the brush, was a huge grizzly with still more ravens on the ground about him—a true wildwood monarch asleep on his throne surrounded by a ring of tried-and-true dark-skinned retainers. But if the raven makes a meal off the remains of the feast of

[6] WRIGHT, WILLIAM H. *The Grizzly Bear.* Pp. 227-228. Charles Scribner's Sons, New York. 1922.

this lordly master, I have heard that even the grizzly profits from the killing of the mountain lion.

Bears and lions are not neighborly, and at best each ignores the other; but one bear I knew followed a lion for weeks, and others have occasionally done likewise, profiting by the food-supply — the excessive killing of the lion.[7]

It seems strange to speak of bears as having any relation with vegetation beyond that of eater and eaten, yet they do have influence on forest growth. Seeds of various sorts get entangled in the thick hair and are carried to places perhaps more suited to sprouting. Even small pine and fir cones are carried that way, and the enclosed seeds scattered. The ground everywhere, and especially in or near the forest, is covered by seeds waiting for some chance to soften the surface and give them an opportunity to enter and germinate. This, the bear, with his incessant digging for ants, mice, roots, bulbs, ground squirrels, and other delicacies, does, not only softening up the ground so that the falling seeds can enter, but inadvertently covering the seeds already on the ground, and in effect, planting them. There are many little patches of young pines so planted and set growing by these fuzzy-coated diggers. Furthermore, bears devour enormous quantities of berries, and many of the seeds pass through the digestive process absolutely uninjured. These seeds are often carried long distances and

[7] Mills, Enos A. *The Grizzly*. P. 52. Houghton Mifflin Co., Boston. 1919.

Photograph by M. P. Skinner

The grizzly's companion. Big, black mountain raven

Photograph by M. P. Skinner

Ravens disputing with bears at feeding grounds

Photograph by M. P. Skinner

When walking slowly bears carry their heads low and swing them from side to side

Photograph by M. P. Skinner

Most black bears walk with a shuffling gait

may then be deposited in favorable places where new berry patches will start.

Another effect that bears have on our forest is the destruction of countless rotten logs and stumps, hastening the formation of humus and reducing the danger of forest fires. I do not know just how much this affects the young, growing members of the forest stand, but I am quite sure the destruction of quantities of insects and grubs of various kinds cannot fail to have its effect on the forest trees, although many of the insects living in dead wood do not injure living trees directly.

The black bear can be quick and active for a short distance, but as a rule he is much less so than the grizzly. Although the greyhound, the horse, the buffalo, the antelope, and a few other animals are speedier than the grizzly, still it is very surprising how fast he can run for a short distance and how lightning swift in his other movements. Somehow we always associate great strength with slow, ponderous movements; but this bear is both strong and speedy. For a short distance he can run as fast as a horse; but even when walking, although seemingly very leisurely, the grizzly can cover a surprising amount of ground. His walk is a kind of shuffle, different from that of the black bear, and bearing in its action a clear indication of power. Indeed that is what I remember clearest about my first grizzly. That swift, sure action, seemingly slow, yet really rapid, with the flexible muscles symmetrically flowing, as it were, beneath the soft, shining fur. It was manifestly the movement

of a strong, sure-footed animal and made an impression I have never forgotten. William H. Wright says that

> It differs, moreover, from that of the black bear in that at no time while in motion does the grizzly give one the impression of being off its guard, or, so to say, of there being any point in its stride when its muscles are not under instant and complete command.[8]

But I must confess that almost always, except when the bear is actually feeding, I find the grizzly moving faster than a walk. He doesn't hesitate; he seems to know where he wants to go, and he goes there directly and quickly. In addition to this swift walk, the grizzly has a trot and a seemingly clumsy, but actually swift, gallop. More remarkable still in spite of his weight and seeming awkwardness he can run *uphill* so much faster than other animals that he is considered the fastest of all under such conditions and especially so on rough ground or on a brushy hillside.

A somewhat peculiar habit, more or less characteristic of all bears, is that they carry their heads low, and while standing still or while moving slowly along they are quite apt to keep them swinging from side to side. I have noticed this trait I think more in the case of the grizzly than in other species.

While bears are recognized as the shyest and wariest of big animals, it may be asked what makes them shy and wary? How do they avoid the many pitfalls and

[8] *The Grizzly Bear.* P. 197. Charles Scribner's Sons, New York. 1922.

dangers that beset an animal so universally hunted as this? Happily they are intelligent beyond most animals, and are endowed with a fine sense of hearing and an exquisite delicacy of smell. And these faculties keep them so well informed that unless a man is as keen-eyed, as silent-footed, and has as much woodcraft at his command as an Indian, he may search through the most densely populated of bear haunts without seeing a single bear. Not only are they intelligent but they are at the same time so bold, so many sided, and so resourceful that they are continually doing new things in a new way. Just about the time we think we know bears thoroughly, we find them doing something we never heard of their doing before.

In marked contrast with the acuteness of his other senses, a bear's eyesight is very poor. But then this is to be expected, for an animal that lives mostly in forests where the trees cut off the view, has little need for a sense he cannot make full use of. There are many references in stories about bears, such as: "twenty or thirty yards away . . . . he did not notice us" and "he did not notice the men who stood in plain sight on the other side of the stream"—all indicative of the small dependence placed on eyesight when other senses were rendered temporarily faulty by peculiar circumstances.

Although the outer ears are small and rounded, they are well placed and are very keen. Evidently good hearing and a fine sense of smell compensate for poor eye-

sight. Indeed the delicate sense of smell, so far beyond anything possessed by man, is a never failing source of amazement. While bears, nervous or suspicious of an enemy near, will frequently rise erect on their hind legs in order to see, and especially to hear, better, they always place their main reliance on their noses.

Although bears do a good deal of traveling within their own ranges they do so without such directive marks to others of their kind as the white tail flag of the Virginian deer, the cotton-tail rabbit's fuzzy white signal, and the white buttocks of antelope, elk, and mountain sheep. But bears are solitary, except when one or two cubs follow the mother, and so they have little use for such signals. Instead, a bear mother has a whole vocabulary of calls she uses to keep her cubs with her, to correct them, and to keep them out of mischief. When she is suspicious of threatening danger for her cubs, a quick, emphatic "koff koff" sends them scuttling up the nearest tree, perhaps to the very tip. When the danger is past, she signals them again, down they come, and the whole family wanders on, perhaps to repeat at the very next tree. Where not actually alarmed, a distinctive trait of traveling bears is the frequent rising on their hind legs when suspicious, or when merely curious, a trick the cubs learn very early. In fact I have never seen a cub out of its den that did not rise on its hind feet, usually with one fore paw on its mother's rear quarters, whenever it wanted to see better some object that had aroused its youthful curiosity. Strange to say this almost con-

Photograph by M. P. Skinner

This bear is in a bit of a hurry

Photograph by M. P. Skinner

Black bear going to eat. Note how bears follow exactly in each others tracks

Photograph by M. P. Skinner

This climbing bear shows how bears walk with a flat-footed gait

© J. E. Haynes, St. Paul

Although bears can easily climb a clear tree they take advantage of every limb

stant wandering by the bears leaves very few indications behind. We know that great numbers of bears in the Yellowstone, both black and grizzly, are constantly moving, yet we see very few tracks, and those we do see are almost always in the roadside dust or in mud or wet sand. In a few places, notably near the scrap piles, there are trails made by the constant coming and going.

Most of the black bear's traveling is done at a shuffling, slightly toed-in, walk wherein both the fore feet and the rear feet are planted flat on the ground, heels and all, a true *plantigrade* walk totally unlike the cats and the dogs. To be sure the ground may be, and usually is, too hard to show the outline of the extreme heel clearly. Black bears all make use of this shuffling walk and also trot when not in an excessive hurry. But when they are in a hurry, they have a particularly ludicrous gait. Their long legs reach farther and farther outside past their fore paws at each jump. This arches the back above the head and soon it looks as if the bear is making a living whirlingwheel of himself as he goes bounding along. As an old hunter friend of mine expressed it of a rear and rapidly dissolving view: "When that old black bear got in a hurry, it sure looked as if she was all rear end." To one who has only seen a bear in a zoological garden, the amazing agility and wonderful speed is truly astonishing. When moving at such headlong speed, different individuals vary a great deal; some dash into and through everything in their path, while others move off as silently as a wraith. They jump over such rocks and logs as

Photograph by M. P. Skinner

This climbing bear shows how bears walk with a flat-footed gait

© J. E. Haynes, St. Paul

Although bears can easily climb a clear tree they take advantage of every limb

stant wandering by the bears leaves very few indications behind. We know that great numbers of bears in the Yellowstone, both black and grizzly, are constantly moving, yet we see very few tracks, and those we do see are almost always in the roadside dust or in mud or wet sand. In a few places, notably near the scrap piles, there are trails made by the constant coming and going.

Most of the black bear's traveling is done at a shuffling, slightly toed-in, walk wherein both the fore feet and the rear feet are planted flat on the ground, heels and all, a true *plantigrade* walk totally unlike the cats and the dogs. To be sure the ground may be, and usually is, too hard to show the outline of the extreme heel clearly. Black bears all make use of this shuffling walk and also trot when not in an excessive hurry. But when they are in a hurry, they have a particularly ludicrous gait. Their long legs reach farther and farther outside past their fore paws at each jump. This arches the back above the head and soon it looks as if the bear is making a living whirlingwheel of himself as he goes bounding along. As an old hunter friend of mine expressed it of a rear and rapidly dissolving view: "When that old black bear got in a hurry, it sure looked as if she was all rear end." To one who has only seen a bear in a zoological garden, the amazing agility and wonderful speed is truly astonishing. When moving at such headlong speed, different individuals vary a great deal; some dash into and through everything in their path, while others move off as silently as a wraith. They jump over such rocks and logs as

get in their way, but should they encounter a clump of bushes they are quite likely to crash through.

Much as I had seen of bears, I never had considered them as possible jumpers until one day I was following one that I had scared and who, when he vanished from my sight, was going as if Old Nick, himself, was after him. It was bad country to travel through, for the trees were thick and a heavy wind had felled many. It seemed as if I was constantly crawling under or over logs, and, just as I was all doubled up under one big, half-fallen tree, it occurred to me to ask: "How did that bear get through?" His tracks on the damp, partly muddy, ground were plain to see. Just before he reached that log, he had "taken off" and sailed over like a bird, for the log bore no mark at all of his muddy feet. From his "take off" he had cleared four feet in height and eighteen in distance! A fine healthy jump for a three-hundred-pounder, but not remarkable beside other jumps I have since measured; rather an average performance, in fact! And yet, later, I found where a bear trail ran under a fallen log and there I noticed that every bear stooped and crawled under it although it seemed to me much easier for them to have climbed, or jumped, over. I afterwards watched this log for many days and the program of stooping and crawling never varied.

But very few of us who have seen him, have any doubts as to a black bear's ability to climb. It looks so spectacular to see such a lumbering body suddenly aroused and scooting up the nearest tree, pretty much

like a lineman going up a telephone pole, that we never forget it. When a bear gets in a hurry, he is an even more striking climber, for then he ascends by a series of leaps. Digging his toes in below, he leaps upward from their support to catch a higher hold with his strong fore arms, although they only hold while he digs in his sharp rear claws and leaps upward again. This sounds awkward, but as the bear does it, it is a very efficient way to get up quickly. Naturally, as the bears grow fatter and fatter in the autumn they give up climbing to a large extent. I do not know how young a bear is when he begins to climb, but even the smallest is so expert that I imagine the ability is born with him and he needs only to see the first tree in spring to put his ability into practice. Since the cubs are taught to climb trees out of danger, and do it steadily throughout their first year, it is but natural that yearlings and two-year-olds should climb more than their elders. Indeed, I think they make a practice of doing it to keep away from the cantankerous, surly old fellows, and rest and sleep in trees for the same reason. I was very much amused, though, to see ravens find and scold these perching bears. Yet I doubt if the *bears* found it amusing for they wanted to sleep, while the excited, whirling, scolding birds kept up such a clamor that sleep seemed impossible.

We are all more or less familiar with the statement that grizzlies do not climb trees, yet it is a statement like so many others connected with this astonishing bear

that needs a little study. Lewis and Clark were the first to mention this lack of climbing ability under date of June 27, 1805, and as they had then known the bear for two months by actual contact, it is probable they spoke from observation. Apparently Lewis and Clark made no statement as to the cubs, but almost every writer since then has stated that the cubs, less than a year old, did climb, while the adults did not. But no one has said how rare it is to see even the cubs climbing. Personally, I have spent many years on the grizzly range without ever having seen one climb a tree. My friend, Sam T. Woodring, Chief Ranger, tells me he once saw a young cub six months old, who managed to climb four feet up the smooth trunk of a five-inch-pine tree by grasping it with his fore arms around while the hind legs clutched the trunk with thighs and knees. Probably it is very seldom that even a cub climbs a tree, and we must not forget that the great weight of the grown grizzly is against climbing, and that his claws are not at all suitable. Possibly these bears might have climbed had they wanted to, but their habits were such that the ability has lain dormant until now it is almost entirely lost to the species.

Those of us who have camped in a black bear's range, especially here in Yellowstone National Park, have good reason to remember his climbing ability. A bear's nose is keen and his appetite for bacon and sugar will lead him to do almost anything to get these dainties. His ingenuity is great and his persistence is monumental;

Photo by Miss Dina Rees Evans

Bears climb pretty much like a lineman
going up a telephone pole

© Courtesy Roosevelt Wild Life Forest Exp. Sta.
Photograph by Edmund Heller

When a leaning tree has a rough bark
the bear walks up much as
he would a hill

© Courtesy Roosevelt Wild Life Forest Exp. Sta.
Photograph by Miss Hilda Hempl Heller

Shows how bears depend on their rear claws

combined with these is a strength so prodigious that no box or package short of fairly heavy steel can withstand him. Our automobilists have found to their cost that it is far better to leave their eatables right out in the open than to attempt to hide them under seats, or in boxes and running board containers. Otherwise, bruin will surely smell and smash his way to them.

I recall how when we first camped we had to devise a way of "saving our bacon." First, the natural method was to hang our provender up in the trees, but our antagonist could climb better than we could, so we stretched a rope between two trees and hung our meat from that. It was safe for a few nights; then bruin chewed the rope and broke it. Then we laid a pole from tree to tree and the bear walked out on that; next time we tried a small pole and he smashed that down. Then we made a supreme effort, built a small, square wooden platform, secured some telephone wire, and suspended the platform from four trees by a wire from each corner. Then we rested in peace and our bacon in security for a few nights. In fact we were congratulating ourselves that we had outwitted the enemy when "c-c-c-crash" the whole thing was down. That pestiferous bear had climbed above the platform and jumped down on it! Then we decided to put the bacon in our sleeping tent, but we put it in the back part, and bruin slit a neat hole in the canvas and lifted his booty out. Then, we all slept in a circle with the provisions in the center. For a time this was effective, and we slept peacefully, only

to find that our eatables were gone in the morning. The soft ground showed that the black bear had come, stepped over the thinnest sleeper and had removed the articles one by one without awakening anyone! That was enough; we admitted ourselves outwitted then and there, and went home; we had to go, anyway, we had no food left!

It wasn't long after that, that a rather severe test was tried in Yellowstone Park on the bears. At the Lake Hotel a guy wire, less than a quarter inch in diameter, ran from a wooden anchor in the ground, at about a sixty degree angle up to the steel smokestack of the boiler house. Some ten feet up from the ground a small bit of meat was placed. In less than ten minutes, the stack was shaking like a wind-tossed pine, and the astonished engineer ran out to see what was going on. There was a bear going up the guy, but hanging from and underneath it, with claws curved neatly over it. He slid back many times and fell off once or twice. But persistence finally won, and he secured the meat. Although authenticated by several witnesses and photographs, it was an almost unbelievable culmination of cunning, strength, daring, persistency, and climbing ability!

While the short, stout claws of the black bear are ideal for climbing and tearing logs apart, they do not seem so well adapted to digging. And although he does quite a bit of digging for roots and small animals his ability in that line is not as marked as the grizzly's. As a swimmer, the black bear is powerful and sure, frequently

crossing swift, deep rivers and even quite large lakes. In this accomplishment, as with climbing, the black bear seems to excel his larger cousin, the grizzly.

My own experience is that grizzlies can swim, but do not like to do so. They do not swim as fast as other animals, but they are strong swimmers, although they seem to exert more of their energy in keeping their heads and shoulders higher in the water than necessary. While I have never seen one swim any distance, on the other hand I have never seen one distressed and imagine they have no difficulty in going wherever they want to. It is amusing, though, how quickly and promptly they take advantage of a man-made bridge, or even a log, thrown across a stream. The bridge at the Canyon is particularly beloved by bears wanting to cross the Yellowstone River.

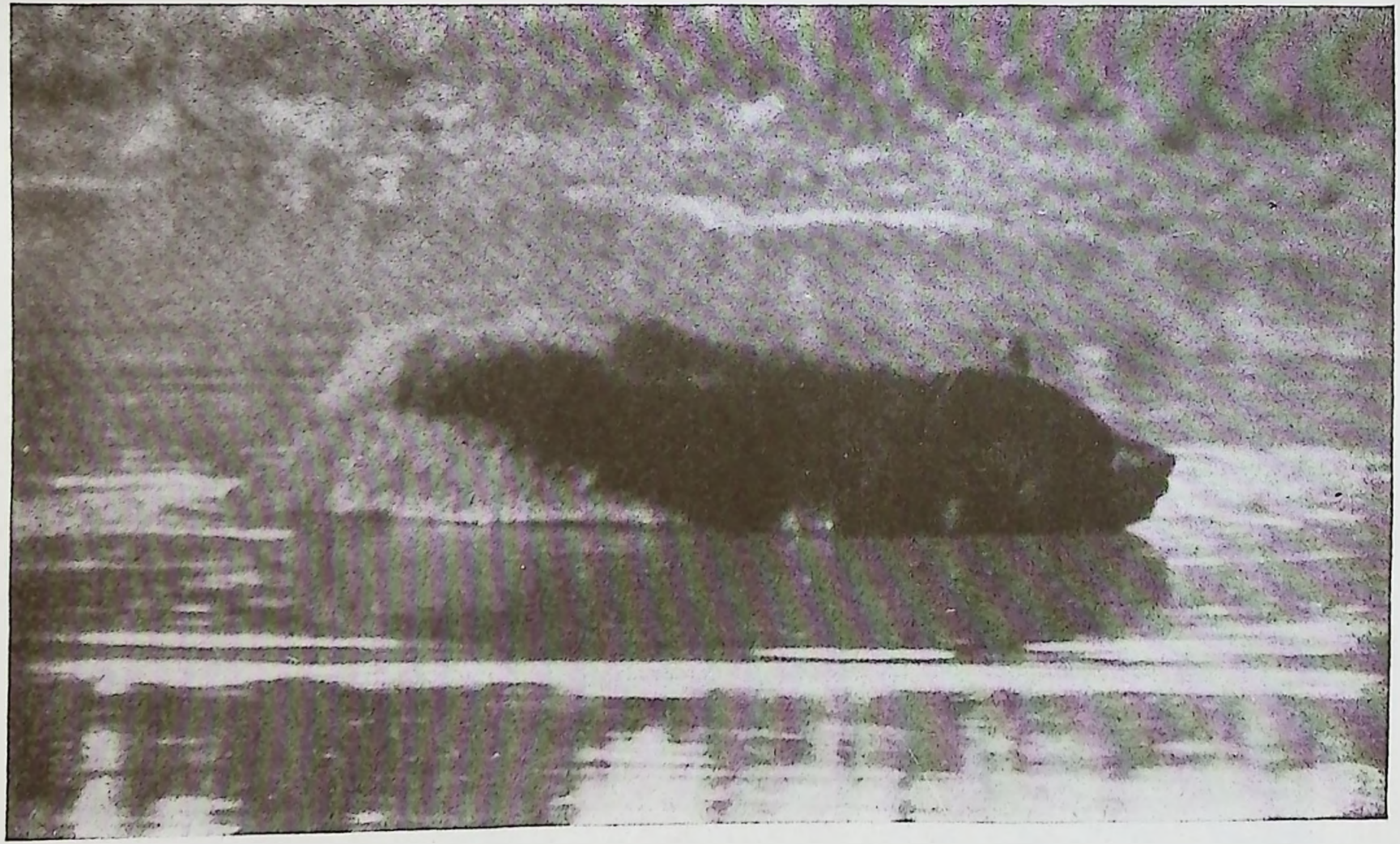
While I do not often see one in the water bathing, the grizzlies manage to keep their fur so slick and glistening in spite of rooting up bulbs and mushrooms, digging for mice and chipmunks, and gobbling up all kinds of carrion, that I have always considered them rather neat in personal cleanliness, much more so indeed than the black bears. This of course applies to wild grizzlies. In captivity it seems absolutely necessary to provide a generous supply of water for both black bears and grizzlies. Still I am not quite convinced of a sense of cleanliness and sanitation in the wild black bears. I would not call the average one in the Yellowstone a cleanly animal, for their habits are too much like those

of pigs. Eating highly odorous carrion, as they do, they quite often carry about with them altogether too plain an evidence of their gross appetite; especially so when they sprawl themselves out over parts of their feasts.

I well remember one old bear that had been eating at a garbage pile and got the stuff all over his hind quarters and then rolled in a mud puddle. There was no mistaking him by eye or nose, and I particularly noted on each of the next eight days that he still carried these marks about with him, sure evidence that he had not bathed during that time. This grossness applies to the older bears, however, for the cubs are almost always slick and clean and much more attractive looking.

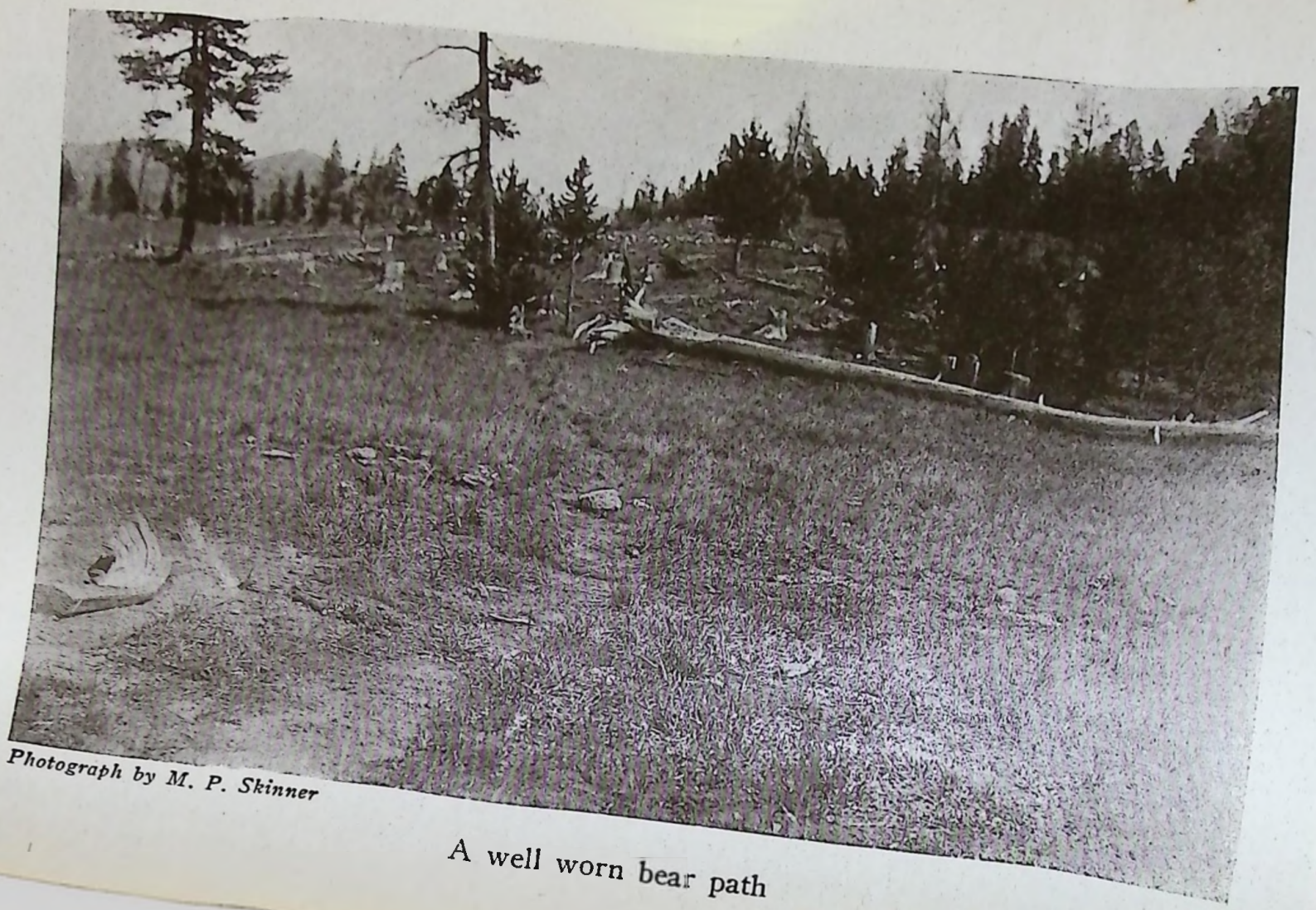
Late in summer most bears are very fond of rolling in watery mud, or if they cannot find that, they will bathe in clear-water pools. At that time of year, the fur of the bears is materially thicker, and the animals suffer a good deal from the hot spells. When such days come on, they seek a muddy pool during the middle of the day, and lie and wallow in it for from five to thirteen minutes. When the bears leave the cooling baths they do not shake themselves, but allow the surplus water to remain in their fur and prolong the cooling as long as it will. I have even seen them enter the Yellowstone River and swim aimlessly and erratically about for ten minutes as if enjoying the cooling freshness of the water; but I always thought it was the cooling, and not the cleansing, that attracted them.

Still it would seem as though bears must have some



Photograph by M. P. Skinner

Taking a bath



Photograph by M. P. Skinner

A well worn bear path

idea of personal cleanliness, for I have never seen one sick and never found a dead one due to any natural disease whatever. So that it is more probably true that the filthy specimens I have seen were the lazy, degenerate members of their race. I have seen them wallow in sand banks and in dusty places, tending to show that bears make some use, at least, of these facilities. And a few times, I have run across a lazy old fellow lolling about on the hillside in the full blaze of the sunlight, and apparently thoroughly enjoying a genial sun bath. I have examined their winter dens after the bears have left, and while there was a musty, animal, "beary" smell mixed with that from the rotting vegetation, there was nothing further to indicate the slightest deviation in any case from perfect cleanliness.

CHAPTER III

THE GRIZZLY'S UNDESERVED REPUTATION

BEFORE I ever had a chance to come west and get acquainted with the grizzly, I had read all the tales I could find about that wonderful animal. On my very first trip to the Yellowstone, I was all eagerness to see a grizzly. To my mind in those days, a grizzly was the most desirable of all sights to be seen; further he was an animal to be admired for his strength and courage, for his sagacity and intelligence, and especially for his fierceness and vitality. As I came to know the grizzly from such a beginning, I first admired the animal and then I began to respect him. But I never found the raging, bloodthirsty brute, ranging the forests in terrible ferocity with all other inhabitants flying terror-stricken before him which was the picture the old chronicles had given me. Could it be that the old-timers were wrong in their estimates? Or had the grizzly changed his character and disposition?

To answer such questions as these, I found I had to get rid of all preconceived notions, note only such happenings as I could clearly see, and always keep my mind open. Almost immediately I was brought face to face with the individualism of bears, especially grizzly bears.

No two of them acted alike, even when all their conditions and surroundings were the same.

I found the grizzly was more intelligent, bold, cautious, courageous, and self-confident than his black cousin. With such a group of contradictory attributes guided by a keen intelligence, ever inquiring, ever curious, ever searching the why and the wherefore, and in addition, always on guard against danger, I soon ceased to wonder at his never-ending variety of behavior. Though I have studied him for years, I do not now, nor do I ever expect to, understand him always; but I have learned never to make generalizations about him, except to expect the unexpected, for I have found the grizzly to be an animal of great individuality. Although most grizzlies minded their own business and desired only to be let alone; others were more easily provoked, and when roused, were terrible indeed, for they were endowed with matchless strength and a superb courage. Some of the truculent ones needed very little to rouse them into a raging fury that "saw red."

It is easy to understand why the Indians did not care to attack such an animal; and, when they did attack in parties, why the grizzly so often emerged victorious. Knowing their own strength, and having so often defeated the Red Man, it was but natural that the bears' confidence in their own ability should be increased rather than diminished. Even when they began to meet white hunters with their uncertain, slow-loading, small-bore rifles, the grizzlies often turned the tables on the hunters.

Unfortunately for an early, just appreciation of these undeniably strong, courageous fighting animals, their white discoverers were unconsciously preinfluenced in their judgment. Lewis and Clark spent the winter of 1804-5 with the Mandan Indians in what is now North Dakota, and only eighty miles below the mouth of the Little Missouri River, and on the eastern border of the grizzly range. Undoubtedly these Indians had met with, and hunted, these bears. Since they knew the explorers' keen interest in all that was before them, can we doubt that the "white bears" were never-ending subjects of Indian tales and discussions during the long winter evenings when there was a dearth of things to do? Nor should we lose sight of the fact that Red Men were much like their white brothers; they took keen joy in "stuffing the tenderfeet"; and Lewis and Clark were tenderfeet then, for they had never seen a grizzly and never up to that time had even heard of one. There is no doubt that there were Indians in Fort Mandan who proudly wore their bears' claws, and "no higher badge of supreme courage and prowess could be gained by a warrior than a necklace of grizzly claws."[9] Shut up in the small confines of a winter camp in constant contact with Indians who "gave greater honor to one of their young men who had killed one [white bear] unaided, than to him who took the scalp of an enemy,"[10] do you deem it possible

[9] Nelson, Edward W. *The Larger North American Mammals.* P. 440. National Geographic Society, Washington. 1918.
[10] Wright, William H. *The Grizzly Bear.* P. 230. Charles Scribner's Sons, New York. 1922.

that Lewis and Clark could fail to be impressed by the animal accorded such distinction? Lewis and Clark were impressed and their imaginations were keenly aroused, in fact they say so:

Captain Lewis, who was on shore with one hunter, met, about eight o'clock, two white bears. Of the strength and ferocity of this animal the Indians had given us dreadful accounts. They never attack him but in parties of six or eight persons, and even then are often defeated with a loss of one or more of their party. Having no weapons but bows and arrows, and the bad guns with which the traders supply them, they are obliged to approach very near to the bear. As no wound, except through the head or heart, is mortal, they frequently fall a sacrifice if they miss their aim. He rather attacks than avoids a man, and such is the terror which he has inspired, that the Indians who go in quest of him paint themselves and perform all the superstitious rites customary when they make war on a neighboring nation.[11]

And later, although the leaders were influenced by the tales told, they nevertheless recorded: "Hitherto, those bears we had seen did not appear desirous of encountering us"; that is, instead of seeking battle, the first grizzlies seen avoided it. Even when Captain Lewis and his companion attacked these two "white bears," one pursued them only after being wounded, and the other "made his escape"; that is, he ran away even after he was wounded. Now both Lewis and Clark were unquestionably brave men, and just as unquestionably they were conscientious and truthful in their report. But

[11] *Journals of Lewis and Clark.*

they were human, and they could not disabuse their minds of the terrible tales of ferocity they had heard, or they would have given more weight to the fact that several bears avoided them before one was provoked, wounded, and badgered into attacking them.

No matter how much we try, we are all more or less affected by what we hear. Even trained naturalists, out to observe and record every fact they can, feel these thrills and these excited premonitions. When dusk settles down on their camp, the changing light effects bring out into bold relief many a bush and bowlder previously unnoticed; almost invariably the instant thought is—Bear! Later in the evening about the camp fire when every sound, however innocent, is magnified and contorted, I have seen men of mature judgment and undoubted courage leap suddenly to their feet at the hoot of an owl or the sudden snort of one of the horses. Even the unsophisticated feel it—there is magic in the very name of grizzly—and hearts thrill and faces blanch at a mere hint that they are at last in a grizzly country. Is it strange, then, that Lewis and Clark felt this same foreboding when heavy responsibilities were upon them, and their informants invariably dwelt on the fury and ferocity of these bears?

Notwithstanding this predisposition to fear, and record, the ferocity and battling prowess of this great bear, there is much food for thought in their short and pithy records, substantial evidence in themselves of the reliability of these great explorers, because it gives evi-

dence of what the bears do even to this day. That they steal meat and "become exceedingly troublesome" no modern camper in the Yellowstone will deny. That "they constantly infest our camp" exactly corroborates my own experience again and again. But with this, as with the other memoranda of the "Journal," later writers have taken all sorts of liberty and invariably have interpreted them as imagination dictated.

Little account is taken of the grizzly's inborn curiosity, one of the most marked traits of the animal. Indeed it is second in importance to, and possibly only a phase of their great intelligence; perhaps we might go even farther and say the two traits go together and are interdependent upon each other. Their curiosity is even so great that at times it seems to overbalance their native caution, and appears as surprising boldness. Every hunter knows and acknowledges the supreme wariness of this animal at the present time, yet I wonder if many have known that it watches and studies us when it thinks itself unobserved. Again and again, records tell us of this curiosity indulged until the animal's caution reasserted itself, and it appeared momentarily overwhelmed at its own lack of wariness, and hastily retreated. Coupled with excessive curiosity is the poor eyesight that carries the investigator into much closer contact than it might otherwise seek. It is not strange then that having found a camp where he could get food more easily than by hunting for it, in addition to safely indulging its curiosity, the bear "infests" the neighborhood. The grizzly does this today

wherever he gets a chance! If Lewis and Clark were interested and curious about the "white bears," it was but natural that the bears should be still more curious about the first white men to visit their country. Lewis and Clark certainly imply that the bears were not only "exceedingly troublesome," but very numerous as well. Does any one imagine that if they wanted to attack the camp, the one small watchdog would have stopped them? If the grizzlies were as pugnacious, as ferocious, as prone to attack as popular writers make them out, why didn't they attack the sleeping men? Although Lewis and Clark's men slept out night after night in the bear country there is not one record of such an attack, although the bears "infested camp during the night." Furthermore, since that time, of the thousands of men who have slept night after night without sentinels, without dogs, without even the protection of a flimsy tent, and often alone, there is not one record of a sleeping man being attacked! Why, if the bears were so ferocious, did they invariably neglect such opportunities? There is nothing that I know of, save that he is at peace with all creation, in a man's sleep that he should be so respected. No other animal, rightfully a grizzly's prey, is so respected. The real man-eaters amongst the tigers of India and the lions of Africa, do not wait for their victims to wake up before they attack them! I have myself slept out time and again in the grizzly's range, without even being awakened, only to find in the morning that the bears had been around and through the camp

Photograph by M. P. Skinner

Bear taking a mud wallow

Photograph by M. P. Skinner

Disturbed. Gets up to smell and hear what's coming

Photo by Miss Dina Rees Evans

A camp foraging bear. Camp Roosevelt

repeatedly as their great, unmistakable tracks testified.

But less veracious writers, who had probably never seen a bear, magnified and embellished Lewis and Clark's accounts out of all resemblance to the original. And how could still later writers get the background, the first hand knowledge to sift out these stories when they had never met a grizzly themselves, and probably would not know him if they saw him? The hunters and trappers did not have the training to avoid unreliable generalizations and the writers could not have known of the individuality that makes it dangerous to generalize about an intelligent animal like the grizzly, endowed with a multitude of contradictory characteristics.

While the grizzly, for the most part, is anything but a sullen, ferocious animal looking for trouble, we must not get the idea that he is never dangerous and will not resent an injury. When he is cornered, or thinks he is cornered[12] as Dr. W. T. Hornaday puts it, there is no more dangerous animal to be found. The activity of his brain is of lightning quickness, and when he decides he must fight, he acts at once. And his determined charge backed by a fearless courage and matchless strength, cannot be stopped except by instant death; and if not stopped, is sure to result in death or a severe mauling of the opponent. Those who know the grizzly, even old hunters fearing nothing and having curiously distorted views, always accord him the respect that is his due. I

[12] *The Minds and Manners of Wild Animals.* P. 129. Charles Scribner's Sons, New York. 1922.

have spent many years of my life in the grizzly's country, camping, hunting and associating with bear-hunters. As I increased in knowledge of the grizzly and in general experience I found my respect and admiration for the grizzly increasing by leaps and bounds. And with the growth of my admiration, came the realization that here was an animal to be let alone unless I was looking for trouble. When a grizzly makes up his mind to resent an injury, or to attack an aggressor, he carries his attack home with irresistible persistence. He does not stop to count the cost or the odds against him. I would no more provoke a grizzly, or venture upon any action that he might resent, than I would jump into the Giant Geyser. If, in the old days, self-confidence was a predominant trait, it is far overbalanced now by the greater caution that has come from years of contact with the death-dealing rifle. But the more I know of grizzlies, the less do I believe that they were ever the ravening monsters the nature-fakers would have us believe, or that they ever sought trouble unprovoked.

CHAPTER IV

WHAT BEARS EAT AND DRINK

IF WE were to list everything that black bears and grizzlies are known to eat, that list would include practically everything edible. In Yellowstone National Park, the black bear catches innumerable mice, chipmunks, ground squirrels, and woodchucks, but seldom disturbs the larger animals although fitted by nature with strength and weapons to be a killer if he wanted to. On the other hand I have seen the timid antelope and the wary mountain sheep watch bears with great curiosity but without any indication whatever that they feared them. The grizzly will catch and eat all the small animals that the black bear does and in addition I have heard of his killing buffalo calves at the Buffalo Ranch and chasing the mother buffalo in the spring when the bears were naturally very hungry. At the same season grizzlies occasionally kill an elk but throughout the remainder of the year, I feel quite sure the larger animals, youngsters as well as adults, are quite safe from the bears even when the latter animals are plentiful.

In such a place as the Yellowstone, where practically all the bears are seen about kitchen-scrap piles, and foraging about camps, it seems very natural to assume that this is the bears' food, or at least the main part.

But when we look a little deeper into the matter, we are pleasantly surprised. "Pleasantly," because it seems too bad that this great, intelligent animal should be dependent upon such foul food. It does not accord with our view of the fitness of things. Of course, it is fortunate for us all that bruin *does* like these man-made foods, otherwise most of us would not see so much of him as we do. On the other hand, we would not have so much trouble with camp-foraging bears and we would not have to guard our supplies so closely. Still it was these scraps that originally brought the Yellowstone bears to our notice and made them so famous that now it has become an established custom to pour out these supplies for them at certain well-known places.

These bears did not take to garbage suddenly and at once. Still less did they come in a body and suddenly become a main attraction of the Park. They had to learn the way, had to learn they would be safe, and even had to learn to like man-made food. When they started to show themselves away back in the early nineties, they came at dusk and only one or two at a time. As they learned they were safe and the food rich and easy to get, they came oftener, earlier in the day, and in increased numbers. Of course, a female bear, who had learned to like scraps, brought her cubs to get some of the good things. And soon practically the whole population at least knew where it was to be had. Still there have always been several bears who never come to the feasting grounds.

Strange to say, early each season, the bears are chary of coming to these garbage piles, and come only at night and then furtively. It is as if they were fearful that the previous year's protection and friendliness had been withdrawn, and need reassurance each season. But it does not take them long to acquire it, and soon they get bolder and within ten days come out in daytime and a few days later they are feeding on the garbage at all hours of the day. In a way they seem to know about when the truck is due with fresh supplies, for they often begin to congregate about that time.

Most of the scraps are eaten upon the spot and very little is carried away by the black bears. The only exceptions being the more highly prized and delectable bacon rinds and ham skins, especially from boiled hams, which are almost always carried off to a safe place where the bear can enjoy them in peace. The grizzlies are much more apt to carry food away. Indeed there are a number of bones distributed along the trails leading away from the feast, although this may have been done by coyotes or other animals.

Occasionally a big black bear will try to monopolize a carcass, or a garbage pile, sprawling out over what he is not actually eating, and keeping all the other bears off. They, on their part, do not recognize his claim but will try to edge in for some, or even drive off the first claimant. When a bear carries off food and meets a larger and stronger bear, he may have to fight for it, or even surrender it altogether. The food carried away is

not taken to a den or cave, but usually into the nearest thicket dense enough to hide the feaster from his rivals. Since young bears are less able to defend their finds from the other bears on the bear pile, they are more apt to carry food away, but I know of no instance where food has been carried off by a mother to feed her cubs.

There are a number of well-worn bear paths radiating from each "bear pile" like spokes from the hub of a wheel. And the bears seem very finicky in their choice of which one to use. They may approach by one path and depart by the same, or by any other. Although some days they favor one path and some days another, they seldom arrive or leave together. The bears, always unsociable, live and travel, each one by himself and seem to look upon their fellow eaters as undesirable acquaintances forced upon them. A small proportion of the scrap-eaters, perhaps five per cent, take a drink after eating, but not for more than two or three minutes at a time and probably more on hot days than in cloudy or cool weather.

At each hotel and camp in Yellowstone National Park, the remains from the tables are collected once, and sometimes twice, a day and carried a short distance away and thrown out. At Mammoth Hot Springs the number of bears is not large and all are black bears — the brown bear being only a colored black bear is included in the latter term. At Norris Geyser Basin all the bears are black bears, and not many in number. At Madison Junction camp there are a few black bears. At Old Faithful

the bears are rather more numerous, although most of them are black bears, occasionally a true grizzly or silver-tip will make his appearance. At West Thumb there are usually a few black bears about. At both Lake Outlet and the Grand Canyon, black bears are very numerous — sometimes as high as twenty or thirty being seen at once — and grizzlies are common enough so that ten or a dozen are often seen in the evening. Some years there are more bears at the Canyon than at any other point in the Park, and sometimes Lake Outlet is the great bear center. At Tower Falls bears are not numerous but there is almost always a number of black bears about Camp Roosevelt and the auto camps. Of course this does not exhaust the localities where bears may be seen, for they roam all over the Park, and may be seen anywhere. Bears are more likely to be in the forested areas, but they are sometimes seen out in the open also. Somehow the idea is prevalent that the grizzly is more wedded to the forest than the black bear; but this is not so now, and never was. True, the black bear always has been a forest-ranging bear; but in the old days, the grizzly often was found far out on the plains and a long way from trees of any kind.

Three-fourths of the bears we ordinarily see in the Park are near scrap piles, yet it is evident that this is not their principal food, or even any considerable part. Bears are hungry folk and eating most of the time, after dark as well as by daylight. With a population of two hundred bears, eating garbage even half the time would

mean a hundred bears so engaged *all* the time. Whereas there are many hours during each twenty-four when not one bear is to be seen and there are seldom more than ten bears in sight at once at any point. To satisfy myself I watched and timed closely sixty-nine bears and found they ate from five to forty-five minutes at each visit, the average meal requiring twenty-four minutes. Occasionally a bear made two, or rarely three, visits a day, though most of them came once and some did not come every day. Some did not come at all but subsisted entirely upon wild, natural food. And some, still more indifferent, passed by within sight of the garbage but did not come up to eat with their fellows. At the Lake and Canyon bear piles there are usually large numbers of seagulls that dispute with the bears for the bits of refuse. When the bears are moving about they keep the big, screaming white birds in a constant turmoil; but when the bears are quietly feeding and when they leave, the gulls settle down in a dense white flock to get their share of the feast. These gulls are California gulls, exactly like those on the seacoast, but these birds have their summer home on Yellowstone Lake, a thousand miles from the nearest ocean.

But if the Yellowstone bears do not depend upon garbage, what is their main reliance? With our preconceived notions it is a distinct shock to see a bear eating grass just like a cow! Yet grass is eaten as much, if not more, than any other single item, and this is true of the lordly grizzly as well as of the common bear.

Photograph by M. P. Skinner

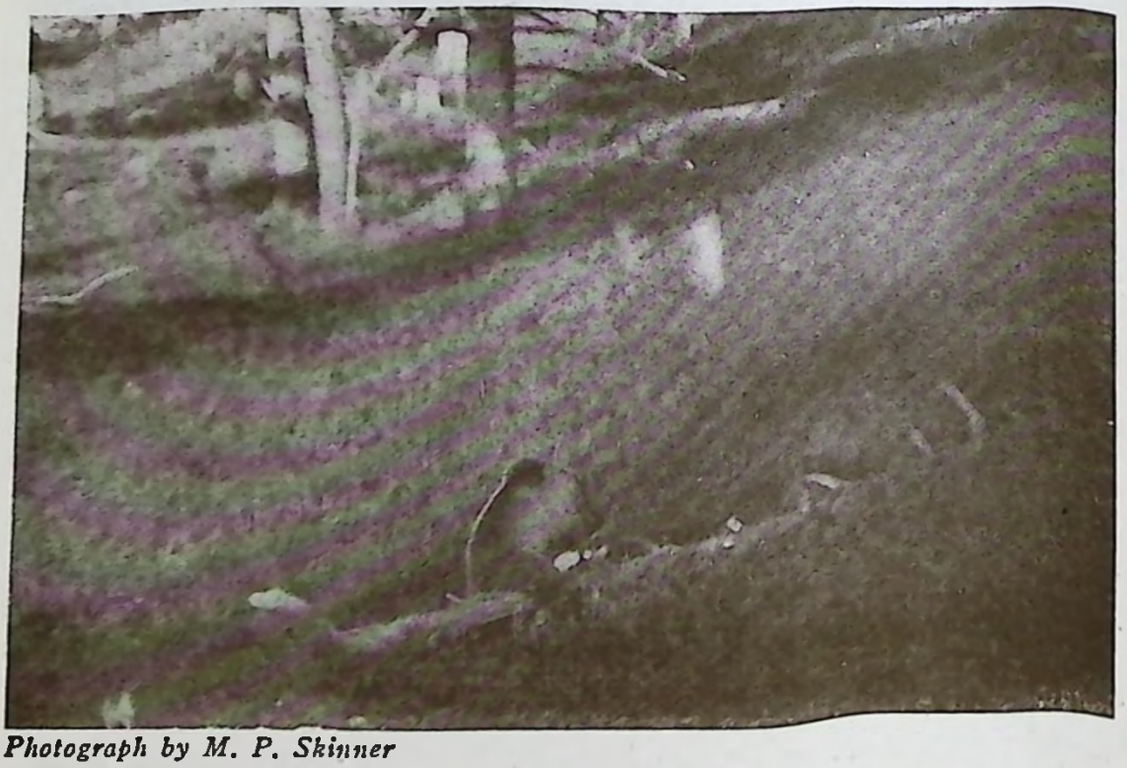
Bears moving. Sea gulls flying nervously around

Photograph by M. P. Skinner

The bears have left and the gulls settle down on the food

Photograph by M. P. Skinner

Ground dug up by grizzlies



Photograph by M. P. Skinner

Grizzly tearing open a rotten log

Grass is often the first thing eaten in the spring and the last thing in the autumn. During the height of summer, grass is eaten even when what we would think more suitable food is immediately at hand. I have seen bears pass right by kitchen scraps, or meat, bacon and ham only to feast on fresh green grass.

Outside the Park the bears are fond of many products of the farm and house garden. At such times they not only eat the silky, green corn and its stalks and green tops, but they relish dried corn as well; and watermelons are noted as a particular favorite. From the fields it is only a step to the housewife's garden where, if they can find an entrance, they work havoc among the green, juicy succulence; carrots, turnips, parsnips are all enjoyed and the great red, ripe tomatoes are a toothsome feast. Even flowers are eaten at times; I have seen these animals eating clover and thistle blossoms and I have heard of dainty gourmets picking and eating fresh, tasty, pansy blooms. From the truck garden our hungry friend may move over to the berry patches where he eats strawberries, raspberries and currants; he feasts on grapes, cherries, windfall apples, and "in British Columbia I have seen orchards bordering the woods assiduously robbed by bears, which may become a nuisance on this account."[13] But if there are not enough windfall apples on the ground already, bruin does not hesitate to climb an apple tree and shake a few more down.[14]

[13] Hewitt, C. Gordon. *The Conservation of the Wild Life of Canada.* P. 110. Charles Scribner's Sons, New York. 1921.

[14] McCowan, Dan. *The Black Bear.* P. 360. Nature Magazine, Vol. 2, No. 6, December, 1923.

Nor does such an all-devouring appetite stop at exotic fruits; I have seen orange skins scraped out and even grapefruit enjoyed, although I have to admit in the latter case that some careless breakfaster was, very likely, too generous with the sugar.

When bears first come out of hibernation they eat whatever they can find to appease what often becomes a ravenous appetite. Then they must satisfy themselves with willow twigs, "dry grass, pine needles, bits of rotten wood, and bark";[15] and dandelion tops and clover and later with edible grasses, dried berries, and green leaves. But soon after spring comes, the menu is more varied, although in some sections at least, green grass remains a staple food throughout the summer.

Possibly because roots and bulbs are not available so soon, or over so large a territory, they take a place on the menu second to grass, but still they are very important. Of these, the bulbs of the various wild lilies such as dog-tooth violets, snow lilies, camass, and wild onions, are most universally sought, but they also search out the roots of spring beauties and thistles. All of these are comparatively small except the camass and all are amazingly insignificant when compared to the huge bulk of the bear. It would seem impossible that such small stuff would pay him for the digging and yet he spends a great deal of time at it, thoroughly overhauling acre upon acre of hard, stony ground. With the

[15] Bailey, Vernon. *Wild Animals of Glacier National Park.* P. 93. Government Printing Office, Washington. 1918.

start of spring vegetation, supplies become still more abundant and a great variety of green plants are eaten.

The great yellow-flowered western dog-toothed violets grow in profusion throughout the Canadian and Hudsonian Zones, and as they begin to come up and blossom at the lower levels the bears dig the tender starchy bulbs in great numbers for food. As they blossom soon after the snow has disappeared, there is a continuous zone of the flowers creeping up the sides of the mountains from May at the lower levels to late in August near timberline. In the latter half of July they were at their best in the Hudsonian Zone, where acres of the brilliant yellow lilies covered many of the open slopes between the groves of white-barked pines. Here the bears were reveling in a feast of the juicy bulbs.[16]

In other places near, extensive areas were plowed over by these bears rooting in the ground like pigs and eating their treasure trove as deliriously as pigs do truffles. Later in the season the young, tender shoots of the heracleum, or cow parsnip, are eaten.

Towards the close of summer when the berries begin to ripen, bears may desert other banquets to luxuriate in the numerous beds of fragrant, juicy, toothsome berries. This is a habit of all bears noted by many authorities, although the animals have different ways of picking in different places. It is probable that berries are the favorite food, for they are most universally sought, and berry patches have a well-deserved reputation of drawing the animals from all directions when they are ripe.

[16] Bailey, Vernon. *Wild Animals of Glacier National Park.* Pp. 93-94. Government Printing Office, Washington. 1918.

I have seen the wild choke cherry broken down and stripped of branches as if by a cyclone, and in other places, especially where the trees are low, the branches often remain intact but all the cherries, leaves, and even the smaller twigs have been eaten off. Both grizzlies and black bears feast ravenously on huckleberries, kinnikinic berries, buffalo berries, snowberries, elderberries, and such other fruits as the Yellowstone Park affords.

They often smash all the bushes in a berry patch, gathering the fruit with half-luxurious, half-laborious greed, sitting on their haunches, and sweeping the berries into their mouths with dexterous paws. So absorbed do they become in their feasts on the luscious fruit that they grow reckless of their safety, and feed in broad daylight, almost at midday; while in some of the thickets, especially those of the mountain haws, they make so much noise in smashing the branches that it is a comparatively easy matter to approach them unheard.[17]

Throughout eastern America blackberries are eagerly sought and devoured. In western Wyoming there are no blackberries, but there the wild red raspberries are the favorites. A bear sits down in a berry patch, gathers all the raspberry bushes into his arms that he can, and, giving a strong upward heave, strips the bushes of leaves and berries alike. But he eats them all with evident relish and then licks the rich wine-colored juice from his arms preparatory to another stripping. I used to wonder what became of the thorns, but finally came to the

[17] Roosevelt, Theodore. *The Wilderness Hunter.* Pp. 63-64. G. P. Putnam's Sons, New York. 1893.

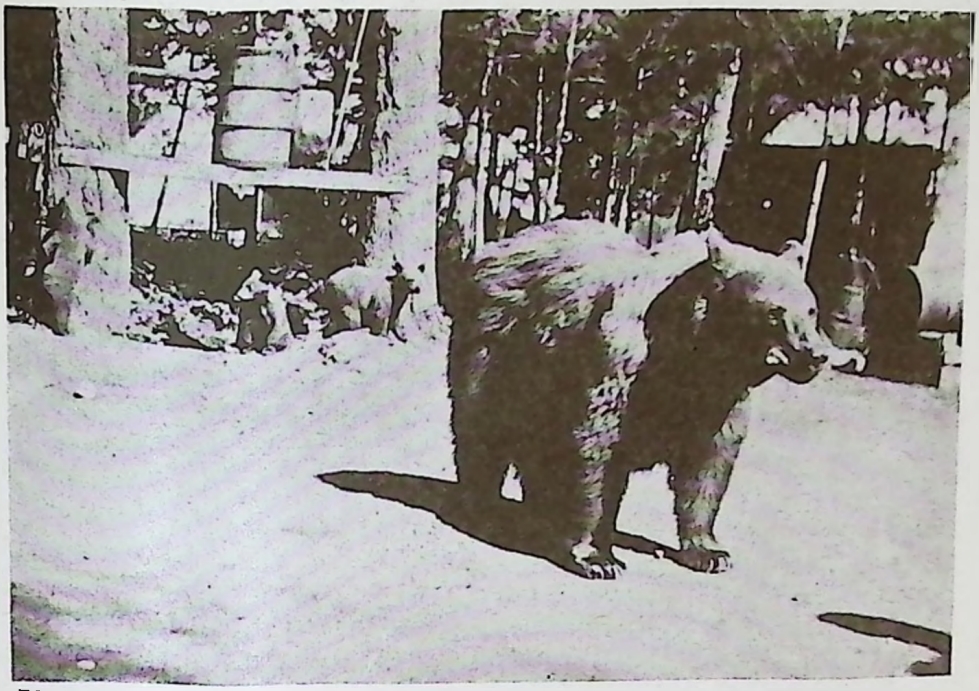
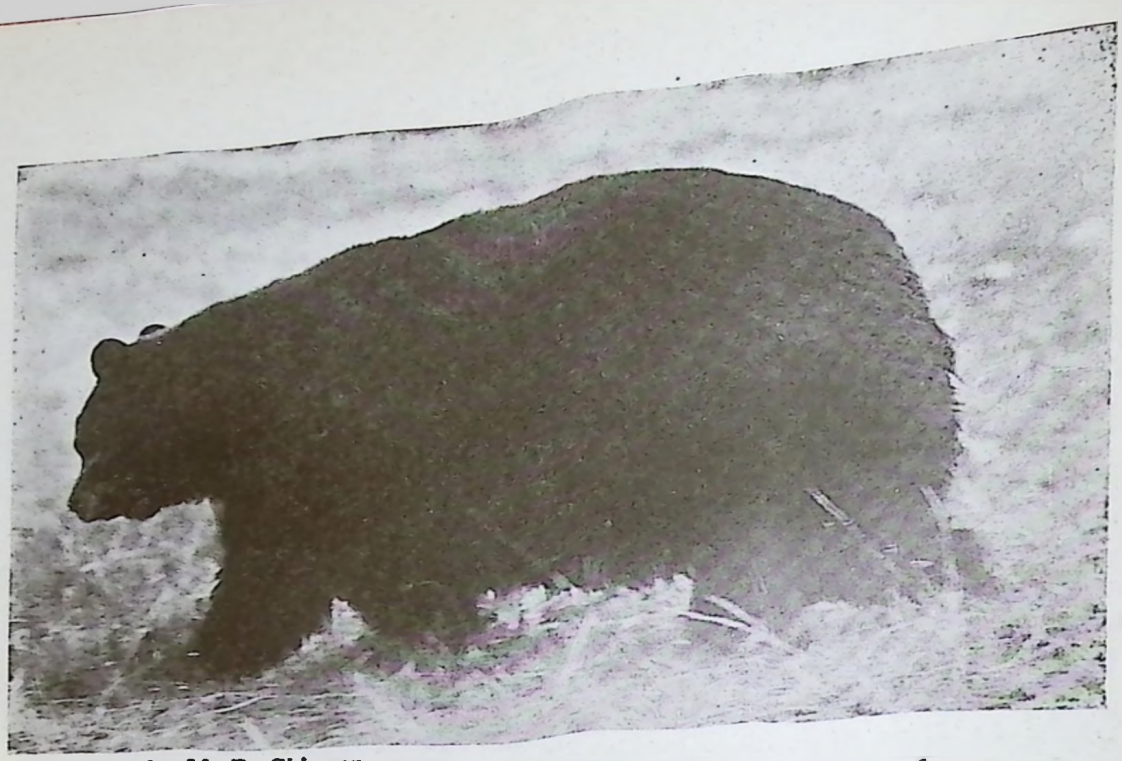


Photo by Miss Dina Rees Evans

Bear Mother brings her cubs to camp

Photograph by M. P. Skinner

Carrying away a prized ham or bacon skin



Photograph by M. P. Skinner

Bears are individualistic, living and traveling alone

Photograph by A. C. Neumann

Children of the wild visiting at Mammoth

conclusion that either bruin's hair was too thick for the short thorns to reach him or that his hide was too tough. I have heard that his eastern brothers adopt the same tactics in the blackberry thickets there.

Elsewhere blueberries appear to be the most delicious morsels a bear can find; and other food is largely passed by when blueberries and huckleberries are ripe. In the Yellowstone, all our bears are fond of our little red huckleberries which are stripped from the plants by bruin's long, flexible tongue, first curled around the stem and then pulled upward. And he uses the same method on the kinnikinick berries where the huckleberries are scarce, or lacking. Needless to say, a good many leaves are stripped off too by this method, but bruin does not mind. In places I have found the fruit stems fairly free from leaves and there the eaters get a more unadulterated diet.

Berries would seem like a difficult food for a grizzly's big paws to secure, but he manages to do it even when the fruit is as scattered as blueberries and strawberries often are. That he also relishes the leaves, and the plants, and twigs bearing the berries makes his meal more fruitful. In September when the chokecherries are ripe I often see these huge bears standing up on their hind legs, drawing the branches down into their mouths, and eating cherries, leaves, twigs, and all. Of course, the cherries have to be comparatively low to be reachable, but most of our western wild cherries grow on bushes not tall enough to be classed as trees. The California

grizzlies used pretty much the same method in gathering manzanita berries. I have seen bears pat berries, leaves, and twigs all into a monstrous cake before eating; and once I found a little fellow who crushed the berries between his paws and forearms and then licked the juice off. He got *his,* free from leaves and twigs, and nicely seasoned with insects of several kinds!

There are no fruits, properly speaking, in the Yellowstone; but elsewhere in the United States cherries, thornapples, wild grapes, wild plums, and in the southern swamps, pawpaws and persimmons are very much sought after.

Nuts are scarce, in fact almost nonexistent in the Yellowstone National Park, so that this resource of bears elsewhere, is lacking. The bears, especially the grizzlies, tear apart large quantities of flexilis pine cones for their sweet, nutty seeds. They are too lazy to cut down and tear up the single cones on the tree tops, but whenever and wherever they can find the red squirrel's storehouses, they have a special feast. And pine nuts are very much prized delicacies, too. Indeed it is more than probable that squirrels find it hard to live on a good bear range, the bears fairly eat them out of house and home.

From nuts to bark is but a step, and yet bark seems like a dry provender until we find that bruin uses his brain and discards the rough outer bark to uncover the juicy new bark underneath. In the extreme eastern part of the Park and to the east thereof in the Absaroka Mountains there are numerous lodgepole pines with their

trunks stripped of bark. These trees, often eighteen or twenty inches in diameter, have been peeled, nearly or quite around, and from the roots to a point five feet above the ground. The outer bark is usually left lying in strips on the ground at the base of the tree but is sometimes found hanging with its upper end still fast. The bears strip these trees by biting the bark loose near the roots and then by a sudden, backward jerk tear off the strip. After the whole trunk is bared, they scrape off the soft, pleasant-tasting under bark so exposed, with their lower teeth, fairly gouging it off. Most of this bark eating is done at medium altitudes — 7,500-8,500 feet elevation — in the spring and early summer.

Even after trees have died and fallen they are still retained on bruin's menu for now they are filled with timber ants, termites, and fat juicy grubs. The undisturbed logs are dry and gray, or black if they retain their bark, or green with soft velvety moss; but if bruin thinks one contains those delightful white grubs, it is but the work of a few minutes for his strong, sharp claws to tear it apart and lay bare its brown heart and its teeming colonists. Everywhere, so far as I know, bears have this habit, and logs and stumps torn apart are the surest signs of the animals' presence because the change of color to the rotting, brown ruins that bruin leaves is so noticeable.

I have often wondered if it was the habit of tearing stumps and logs that led an ursine ancestor to his first store of honey; or if it was the buzzing bees swarming

into the entrance that first disclosed their golden treasure to the furry-coated epicure? At any rate, so extremely fond of sweets are these bears, that one cannot write of bears and leave out their great love of honey. Yet in the Yellowstone the bears get very little honey because of a general lack of honey-bees, and have to content themselves with that of bumble-bees and wasps to a large extent. Notwithstanding that, to the average bear, sugar and sugared sweets are the greatest delicacies he can find, there are some bears that will not touch it. I have seen black bears smell and paw sugar and not taste a grain of it. On the other hand, I have known bears, after having their first taste of sugar, to become the most persistent of beggars and foragers after sweets.

From the prominence given to stone-turning and log-tearing in a grizzly list of activities, we would rightly assume that insects, small and insignificant as they seem, are an important part of the menu. They are! and probably almost every kind is represented at one time or another. Ants, bees, wasps, beetles, crickets, tumble bugs, flies, moths, grasshoppers, and countless others, together with their eggs, larvae, grubs, and young are an endless assortment. Besides the insect-catching methods already mentioned, bears are very fond of the great ant hills found on parts of their range, neatly scooping off the top with a sweep of their paws and gobbling up the enraged inhabitants as they rush out. This seems to be the basis for the tale that Mr. Wright found somewhere, without naming the imaginative author:

He knocks the top off an ant hill, buries his nose in the interior, and by a few inward breaths, like a suction pump, draws every vestige of life from the greatest hill!

Yet I do not know that this is any more wonderful than a bit of my own experience in the Yellowstone. In the course of many trips above timber line I often saw bears, and in time it struck me that they were frequently near huge snowbanks. When I first noticed it I merely thought the bears were eating snow, and it was quite a while before it dawned on me that I ought to investigate further. Soon after that I found the timber-line birds were on those snowbanks, too, and *they* were evidently not drinking. On riding over I found the banks covered with a variety of insects attracted by its blazing whiteness, and chilled so they could not escape. So the next time I saw Old Eph there I watched more carefully, and after he left I found the insects were gone! He had evidently found it rather a convenient lunch counter!

Lizards and snakes are undoubtedly eaten, but probably only incidentally, when accidentally stumbled on, or revealed, beneath an uplifted stone.

Trout, also, are caught by black bears but I have more often seen a grizzly lying on the bank above a pool with one paw hanging idly in the water until a trout came near. Then his muscles gradually tightened, and as the trout reached just the right point, a sudden splash sent it flying toward the shore with Old Eph rushing after it. Whenever I see a fishing bear, no matter how often,

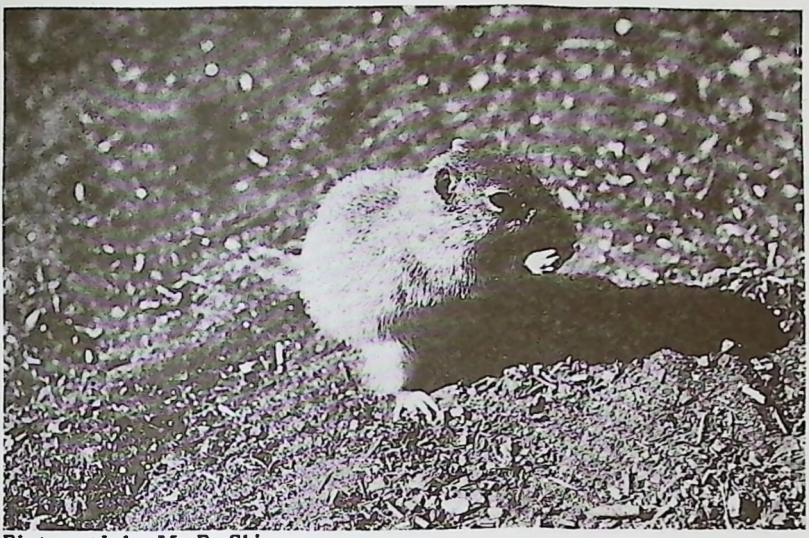
I never fail of amazement at the exceeding patience of the big beast to remain perfectly still for an hour at a time to be rewarded perhaps by an eight inch trout.

From fish to other animals is but a step, yet as we already know fresh meat is not at all an integral part of the menu. Strange to say, mice are, perhaps, the most important and immense numbers, both adult and young, are devoured. Bears listen for mice in the grass, standing on all fours or sitting on their haunches with heads slowing swinging from side to side, and are very expert at catching them. I have already spoken of the immense amount of labor they cheerfully undertake to dig out ground squirrels and woodchucks. There are few bears that refuse carrion no matter how small the carcass nor how odoriferous it may be. Some authorities even state that the older and more rotten the meat the more attractive it is. Sometimes it really seems as if carrion full of maggots is more highly appreciated than when not so seasoned. But a fresh carcass is readily eaten, also, if found; mice, cats, coyotes, scabby sheep, livestock killed by wolves, deer killed and roasted by forest fires, steers bogged in mud or caught in quicksand, all are eaten.

In the case of black bears, where the carcass is too large to dispose of at a single meal it is usually left undisturbed until another meal is desired. But a grizzly will carry it away and hide it for future use, or "cache it" as a westerner would say. There has been much discussion as to how bears manage to move heavy bodies

like horses, buffalo, and even full-grown steers, often for considerable distances. Since most writers use the word "carry," it unconsciously brings before us a mental picture of the burden resting on the bear's back while he walks off underneath, much as the pictures show a fox making off with a goose or a turkey. And yet I do not know that I have ever seen it done that way. His natural way is to pick up the body, if not too large, in his teeth and carry it off; occasionally he takes it under one arm and lugs it off, walking awkwardly on three legs. A larger body he grips firmly with his teeth and drags off, walking forward and twisting his head sideways, or turning his whole body around and backing off with the carcass dragging after him. When he encounters a log, or rock, he pulls his burden over after him; but if unable to make it that way, he drops his prize, goes around, and with nose and forearm, sometimes one and sometimes both, he lifts, shoves, and finally boosts it over. This perhaps has given rise to the general impression that the bear usually grasps his burden in both arms, hugs it to him, and walks off erect on his hind feet. My own personal experience, judging from what I have seen and from the tracks I have followed, has been that hugging and walking off on two feet only, is the least practiced method. I have never known it to be used more than a few feet at a time; it is not a natural position for bruin. Although he frequently rises on his hind feet to look around, waddling awkwardly off on them is a very different matter. And besides it isn't necessary.

The grizzly is so expert at dragging, that I have seen him in the Yellowstone haul a seven-hundred-pound elk up a steep slope that I could barely climb by grasping trees and bushes as I went. Again I have seen him drag a similar load over a wilderness of dead and down trees and on through heavy brush. Once I saw him lose his grip and fall over backwards; as quick as a flash he lost his temper and out shot one paw with a resounding whack on his offending burden. When he got his burden to a suitable place, with infinite labor he often dug a huge hole, put the carcass in, covered it up, and even piled rocks, brush and logs on top. Sometimes he contented himself with merely scratching a few leaves and a little dirt over it. Once I found such a cache in a little meadow with a fringe of willow bushes all about and the pine forest beyond. I selected a large pine and climbed up to await the bear's return. Soon I could see him coming rapidly at a fast walk although evidently cautious and watchful. A hundred feet before he left the forest he rose to his full height and looked carefully all around for a minute or two, and seemed to listen still more carefully. He advanced into the meadow, circling all about just inside the willows, and then rose again for another observation. As he dropped to all fours he flung himself into the willows and out again with a terrific bawl, instantly rising in defense and ready to charge anything that moved. Then he did the same on all sides and to every clump of willows. He was not going to have any interruptions to his feast if he could prevent

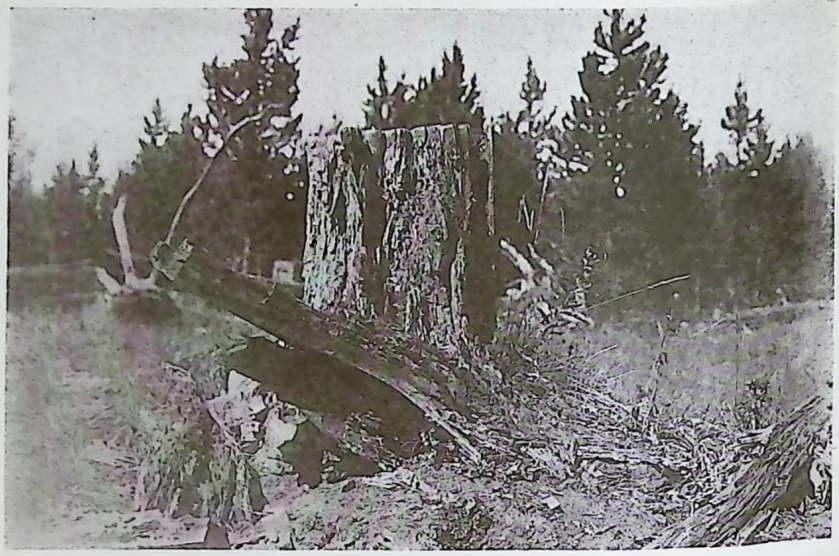


Photograph by M. P. Skinner

Ground squirrels are important food of bears—especially grizzlies

Photograph by M. P. Skinner

Bear just starting to dig up a ground squirrel



Photograph by M. P. Skinner

Stump torn to pieces by grizzlies hunting for ants and grubs

Photograph by M. P. Skinner

Bears like sweets. Here's one with a stick of candy

it. I took solid satisfaction in his reputed inability to climb my tree; but at each bawl he let out, I imagined I could feel my hat rise on the end of my hair!

Domestic animals are not disturbed by either black bears or grizzlies as a rule; that is, if they are in good health and free to escape. But a sick or a crippled animal is quite apt to be killed. But this exemption does not apply to pigs. Many of the families who live in the Yellowstone have attempted to keep pigs; but almost invariably, no matter how many ingenious devices to keep him out, bruin will eventually outwit his antagonist and get his pig if he is given time enough. In this case, persistency on the bear's part nearly always wins.

Naturally it is the grizzlies that are usually feared by horses because of their greater intelligence and massive strength. Yet horses are not bothered much and, when one is killed, it is almost always a young or foolish animal. Some horses are intensely afraid of bears and some are indifferent. Unless they lose their heads, horses are no mean antagonist in a fight. Theodore Roosevelt tells of "a stallion which beat off a bear, breaking its jaw."[18]

One of my own saddle horses, a gelding, although as gentle and tractable as any horse I ever had, never shows the slightest fear. Indeed, if Frank be at liberty, he will attack a bear on sight. He has killed two black bears by lashing out at them with his hind hoofs and then

[18] *The Wilderness Hunter*. P. 55. G. P. Putnam's Sons, New York. 1893.

quickly springing away before the return charge. Once or twice he has struck at them with his forefeet, but usually depends on a lightning quick, crashing blow from the rear. I do not know that he has ever struck a grizzly but he has driven several off, without ever having himself received a scratch in any of his numerous encounters.

Strange to say bears will often devour the carcasses of their own kind, especially if the meat is at all tainted; and they have even been known to eat the fresh carcass of a rival just slain in battle. With reference to this "cannibalism" I remember an old trapper that I talked with in Montana who told me that bear meat made the finest kind of bear bait and that he always used it when he could. I found him to be a very successful trapper but I could not tell at the time whether he was referring to black or grizzly bears, or both. None of the other Montana trappers went so far as to state that they preferred bear meat as bait, but not a single one controverted Heywood's views on this point although I found them very much inclined to argument, especially about trapping. Personally, I should say this kind of cannibalism is certainly common in places.

Although, as I have said elsewhere, there is no danger of the Yellowstone bears attacking or hurting people, we often have some very exciting encounters with them when they are after our food. Two chapters ago, I spoke of the difficulties we have in camp of preserving our food from them. Even when we are in log cabins

and Ranger Stations we are not free from the attentions of hungry bears who want our food.

In the fall of the year, just before the bears enter their long winter sleep, they are intensely hungry and will go to extremes to get food. In October of 1920 I was at the Basin Ranger Station. While peacefully sleeping during the night of the twenty-second, I suddenly awakened to find myself sitting bolt upright on my cot listening to faint cracklings and bumps that seemed to come from the rear. Stopping only to catch up a handy axe I rushed out to see what was the matter. I did not see the bear but his tracks in the snow showed who the marauder was. It was too dark and cold to see just what damage he had done, but in the morning I had a better chance. From his tracks I found this bear had come up behind the Station and circled it three or four times, each time stopping to try the kitchen door. But that door was barred and resisted his efforts. Then he had turned his attention to the woodshed. This was merely a shell of a building with its siding nailed to the outside of the studding. As is usually the case, each board of this siding overlapped the next lower board and so afforded a hold for the bear's claws. By hooking his claws under the edge of the lower board and heaving upward he had torn off three boards and opened up the whole inside of the shed. Apparently he had entered the shed and was preparing to break open an old refrigerator box when my sudden jump from bed scared him away. So he got nothing. But he came back again on the night

of the twenty-fourth and again on the twenty-seventh. Each time the noise I made scared him off so promptly that I neither saw him nor surprised him at his work. Yet he was so strong and dexterous that each time he got from three to five of those boards off before I could get out although I had nailed them fast as securely as I could each time.

But a far more striking example of bear boldness—this time grizzlies—so surprisingly daring and contrary to the animals' usual caution that, for many years, I never ventured to tell it, occurred here in the Yellowstone. In May of 1915 I visited a faraway cabin where a young chap was spending a lonely time caring for horses at a stage relay station. He told me he had been visited a few nights previously by four grizzlies bent on breaking into his meathouse, and showed me the battle ground inside, and the holes in the sod roof. It was in the spring and the bears, only just recently from their winter's sleep, were ravenously hungry. During the early evening, they were heard shuffing about the station, but as they made no overt attack and bears were a common occurrence, they were not molested. They became so quiet that my friend concluded they had gone away and went to bed at his usual hour. Some time during the dead of night he heard a thump-thump on the roof and soon located it over the meatshed that adjoined his bunk-room. He had a rifle, but had used up all his cartridges during the winter on coyotes and had neglected to get any more. But as the sound increased in volume he

Photograph by M. P. Skinner

Two grizzlies on the left. Two black bears on the right

Photo by Miss Dina Rees Evans

Photo by Miss Dina Rees Evans

Good things to eat and drink

caught up his lantern and a handy pitchfork and dashed into the meatroom. This was a stout log lean-to with no other opening than the door into the bunkroom. It needed only an instant to show that the bears were on the roof and *digging through!* The roof was of clay and sod and was still frozen, for there had been no fire under it, although the sun had melted the winter snow from the top. Still more fortunately the split poles supporting the earth were heavy and stronger than usual and overlaid with thin sheet iron, so that the bears had much more trouble than they would have had ordinarily. It was a difficult job but in time they got through the clay, bent back the sheet iron and began to spring the poles apart. Then began a long, hard fight. Whenever a crack showed, the pitchfork was jabbed up through, and whenever it struck a paw or the bears' underparts it brought snarls and "woofs." The paws were so tough, very little damage was done to them, but once in a while a fortunate jab brought blood from nose, breast, or belly. Occasionally a nose or a paw came down through a crack, but a steady clubbing on them caused their withdrawal and more howls. The bears would not give up the contest, but now that the strong odor of the ham, bacon and fresh meat came direct to their nostrils they redoubled their efforts. The poles were strong and the sheet iron protected the roof, but still it is likely they would have succeeded if they could have held out long enough, for George's violent efforts to keep all four bears busy in different parts of the roof were fast tiring him. There

were many times during the long night when it seemed as if he must give up, but finally dawn began to break. At first the bears hardly noticed it, but after a time they became less active and shortly after sunrise they jumped down and retired, growling, to the woods. But the roof was a wreck. The frozen clay was scattered in chunks all about the building, the sheet iron bent, twisted and torn by tooth and claw into a tangle of metal shreds, and the stout roof poles were twisted, clawed and sprung apart until I wondered the bears had not tumbled through. George had not fully recovered when I saw him and he told me he was so exhausted that he doubted if he could have held out for another hour.

CHAPTER V

HOW BEARS LIVE

BY THIS time we are all ready to admit that these bears are very wonderful animals indeed. We are amazed at their intense curiosity and at their almost human intelligence, tempered somewhat by the discovery that the black bears are also treacherous and not to be trusted. Fortunately for our peace of mind, the grizzlies do not show this treacherous streak, but their curiosity is correspondingly greater than that of their black cousins. The more I see and study our bears, the more I become convinced that this latter trait is not so much mere purposeless curiosity as it is investigation, a conscious search for knowledge. Certainly I do not mean to claim that bruin seeks knowledge as an end in itself. But I do firmly believe he bases his life and habits upon the results of his investigations, for he is an intelligent animal. Just as truly intelligent when we admit we do not know just how he became so, as he would be if we knew all about it. Much that bears do, and much that we find astonishing in them — such as winter sleeping, for instance — is due to instinct; but they accomplish so much that could not possibly have been handed down to them from their ancestors, that we are very ready to accord them intelligence as well.

Much that I have already written illustrates the adaptability and resourcefulness of these animals. Perhaps as striking evidence as any is their ready acceptance of the protection and safety thrown about them in the Yellowstone National Park. For an animal, hunted and harried for years until he became wilder and more timid than even our deer, to suddenly change his ways and his manner of life in a few short years, shows considerable adaptiveness and sagacity.

If he is not an intelligent observer, how did the black bear ever learn to bluff? Where did he learn that a pretended charge was often as effective as a real one, and far less trouble? For I have seen this trait manifested many times, and yet I have found only one other reference to it.

> The black bear is a playful bluffer. One day, as I was seated on the edge of Yellowstone Lake, several feet above the water, a young black bear came ambling by. In passing, he leaped at me with a wild "woof." His bluff was effective. I shrank back, and tumbled into the lake.[19]

My own experience has been that the black bears are the greatest bluffers among our wild animals. They often show their teeth and make short, stiff-legged jumps, at times not advancing them more than an inch or two and yet having all the earmarks of a determined charge. However, should the person bluffed, weaken and back off, the make-believe is liable to develop into a real

[19] Mills, Enos A. *Your National Parks.* Pp. 304-5. Houghton Mifflin Co., Boston. 1917.

charge. Occasionally the bluffing bear will rake the ground and leaves in long, suggestive sweeps, very disconcerting to the person concerned. Not only are these bluffs directed against people but at times are used against other bears. The young bears acquire this habit at quite an early age, for I have had a year-old black bear try it on me. And — shall I confess it — sometimes successfully.

That the black bear's temper is a most uncertain thing, that he is treacherous and not to be trusted, is one serious blemish in his disposition according to our point of view. I have alluded elsewhere to the cubs' habit of provoking other bears to fight and then leaving their mothers to settle the affair. Perhaps this is only cub-treachery, but it at least contains the germ of the full-fledged article that they display later in life. Among themselves, this defect in their dispositions is well-known. Some bears are known to others as disagreeable trouble-seekers with uncertain tempers and are avoided by all other bears. This avoidance is carried so far that bears will desert even the tidbits of the garbage piles when it is known that one of the surly old fellows is coming. As a rule all the small bears are suspicious of the large ones. Occasionally two bears will start growling and snarling at each other, but after a time the fuss dies down and the two go to eating. But peace does not last long. Apparently each of the grumpy, grumbling bears watches the other all the time. Should one let down his guard and become less watchful for a moment, that moment

will be seized by his opponent who charges at once. In such cases the charging bear, giving no warning before he starts, rushes suddenly, silently on all fours, and is on the unwatchful one and cuffs him right and left with the full power of those matchless muscles. His opponent is usually bowled off his feet. Then the aggressor springs on him and plies tooth and claw so quickly, so vengefully, and so effectively that the fallen one is vanquished before he is hardly aware of his danger. Nothing is left for him but to get away as soon as possible to nurse his hurts and wait for *his* turn to come. Indeed the fallen one is lucky if no other bears have seized the opportunity and attacked him while he was down.

One day I was watching a black bear of a particularly villainous temper and two brown bears on the bear pile. Knowing the black one's reputation, I was prepared for trouble. But to my surprise it was one of the browns who suddenly rose to his full height and thumped the other brown savagely without any cause whatever that I could see. In an instant the battle was on between the two browns and they circled round and round each other erect on their hind legs like two pugilists. Occasionally a mighty arm shot out and a mighty blow either landed or was dodged. The circling, snarling bears moved round and round, until suddenly one saw an opening and charged home knocking the other off his feet and down on his back. Meanwhile the black bear had been watching and the instant the brown bear went down she joined forces with the punishing brown and both at-

tacked the fallen one. For a few minutes the fur flew wildly before he could get up and get away. But he wasn't much hurt and soon he was back eating again. But trouble dwelt that day in brown-bearville and soon the two browns were fighting again, until the former brown victor went down, and this time the black bear joined forces with the other brown bear and fell to with tooth and nail upon her former partner! But as usual no serious damage was done except that both brown bears lost several patches of their furry coats.

So much trouble develops about the refuse piles that there are seldom more than four bears actually eating at once, the rest of the bears sit around and wait rather than project themselves into the storm center. When a fresh bear does come up to the garbage, he is always greeted with snarls and growls from all the other bears but is usually soon permitted to eat a little. However it is noticeable that every feeding bear suspects every other bear and that they all face in towards each other so that they can the better defend themselves, for a bear always prefers to take an attack in front and not on his flank or rear quarters. So far is suspicion carried that the black bears almost always come to the garbage slowly and cautiously.

This treachery and suspicion is characteristic of the black bears, but not of the grizzlies. Now, I do not mean to say that the grizzlies never fight or take a mean advantage. But it is as rare with them as similar action is characteristic of the black bears. As a rule the griz-

zlies come charging confidently up to the garbage, sure that the average black bear will give way and that other grizzlies, if present, will receive him without hostilities. The incoming grizzly is allowed to eat at once and so generally peacefully that I have seen as many as ten eating at the same time and facing in all directions as if trustful that no one would forget his manners so easily as to launch an unprovoked attack.

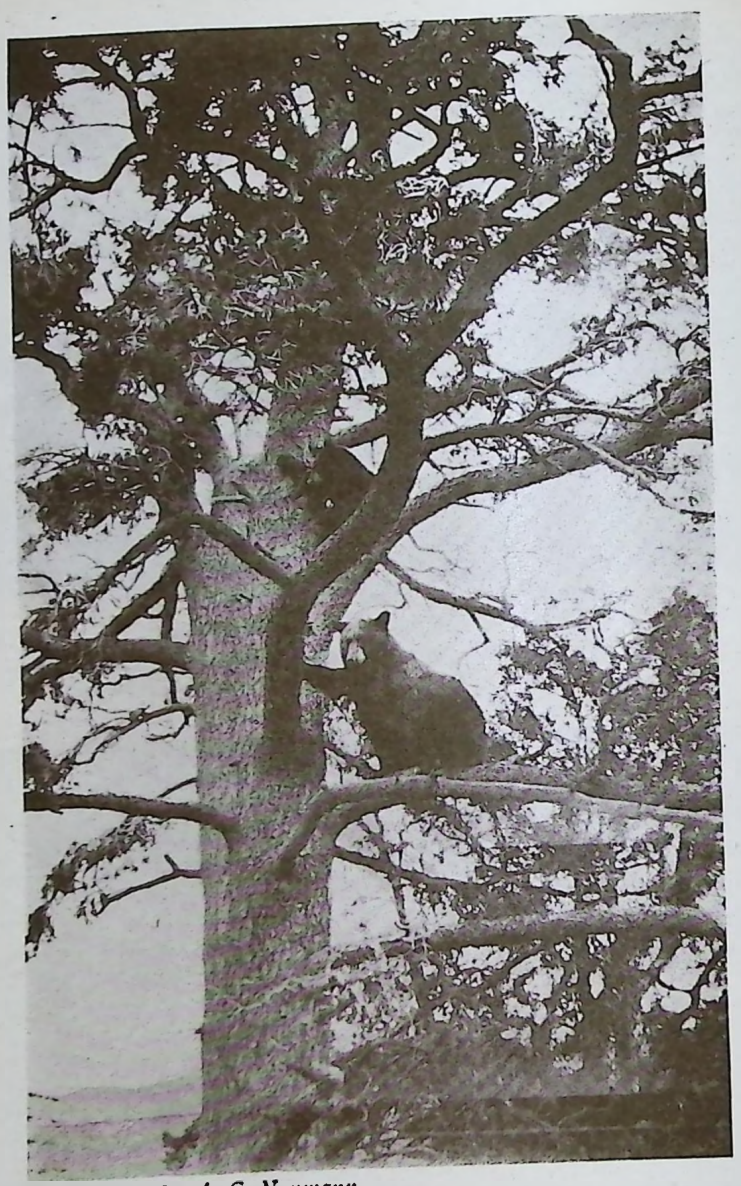
The greatest provoker of trouble with bears is, unfortunately, our own attitude toward them. Although the practice is not forbidden by the rules and regulations, some of our visitors do not realize their danger in feeding bears from their fingers. For a time, particularly if the bear is young, there is no special harm in this. But every black bear is quick tempered and treacherous, and his anger and treachery may develop into towering passions for no reason at all that we can see. Since he has been so often fed by humans, he has lost all fear of them. So when those disturbing passions begin to work the bear will take it out on whoever is nearest. In order to be sure we are not then within reach, we had better keep away from bears altogether. The bear will not respect a person; he will not remember that person's former kindness, nor will he give warning; but he will strike so quickly, so strongly and so treacherously that one has no time, no chance to get away. The records show that dozens of people in the Yellowstone are hurt just this way each season; and yet, as I have said before, even the black bears are normally

© Courtesy Roosevelt Wild Life Forest Exp. Sta.
Photograph by Edward R. Warren

Young bears very frequently sleep on forks of trees

Photograph by M. P. Skinner

Grizzlies do not appear until dusk and are hard to photograph. Even then they keep constant watch as shown by the bear on the right



Photograph by A. C. Neumann

Sometimes bears use convenient trees as outlooks for sightseeing

good-natured and do not molest people who refrain from bothering them.

Under primitive conditions, black bears were probably about as much by day as by night, more so than is usual with carnivorous animals. But with hunters constantly pursuing and harrying them, they gave up more and more their daylight movements and became almost nocturnal. In the Yellowstone National Park they moved about by night until they discovered they were protected, and then they began to resume their old ways coming out more and more by day. At the present time they are out at all hours in cloudy weather, but not so much during the hottest hours of the bright, sunny days. But the grizzlies are more timid, or perhaps they are longer in losing the fear of that long, nightmarish hunting era. So that they seldom appear before sunset, although even in their case an occasional one is seen out in the broadest daylight.

Speaking of nighttime brings bed to our thoughts and we wonder where our bear friends spend the night and if they have regular homes. In the Yellowstone National Park the bears move around by night as well as by day and apparently sleep as much during one period as during the other. I doubt whether bears have any regular homes in summer, for all their movements and resorts then have a direct relation to their food and where they can get it. Although they often sleep in whatever thicket or windfall is nearest their feeding ground, I believe each bear has his own preferred locality for rest

and will go to it if not too far away. I see no evidence that they ever resort to regular dens or caves; but I frequently find their "beds," now here and now there, according as their food causes them to wander. All the beds I have found were in thickets, and there I would find the largest, fattest, laziest bears. The younger and smaller black bears appear to use forks in the trees more as resting and sleeping places especially if there are many quarrelsome large bears about. Apparently they feel it is safer with so many of the crusty, uncertain-tempered old fellows in the vicinity. In spring, bears seem more active, more continually on the go, and less given to sleeping and drowsing in midday. But as cold weather and hibernation time approach they get lazier and drowsier. They certainly travel less and sleep more, at any rate. I have often thought that the increasing thickness of their fur made them feel the heat more, and made *siestas* more attractive. Most assuredly I find them drinking and soaking themselves in ponds and mud puddles more on warm days in September than at any other time. An observing friend of mine, who saw a good deal of bears, noticed this increased autumn sleepiness, and asked me if the "bears became dopy" just before hibernation. Perhaps that is the explanation of lazy autumn bears — a preliminary drowsiness deeper than ordinary sleep, before the real urge to winter sleeping comes.

These sleeping beds are almost always solitary except in the case of a mother with cubs, for bears are not

social in their taste. Either their uncertain tempers make it hard for them to get along with each other; or else lack of companionship makes their tempers unreliable. Take it either way you wish. Even during courting days, a couple are together only for a very short time and then separate again. Search for food will bring a number of bears to the same neighborhood, but even then they are not actually together and often act as if they did not even see the other bears within a few feet of them. They evidently do not believe in true democracy. Nor do they associate with any other animals to any extent. Indeed some writers say there is bitter enmity between the grizzlies and the black bears, going so far as to say the black bears hunt out and kill the grizzly cubs whenever they get the chance, and the grizzlies retaliate by killing all the black bears. But I, personally, can discover no evidence of this. Certainly a small black bear will give way to a large grizzly, or to one of its own size, but a large one will not always give way to a small grizzly. I have even seen a large black bear monopolize the bear pile and keep *two* grizzlies off. More opposed to preconceived notions was my experience on July 19, 1916, when a big brown bear appeared and ate amicably with four grizzlies that were already eating. The next day at this same Canyon feasting ground, I found four black bears eating and a grizzly a short distance off waiting for them to get through. Still, usually, black bears decamp promptly when a grizzly appears, especially when the grizzly comes charging confidently

up as he usually does. But evidently circumstances alter cases.

It is still harder to understand this unsociableness in view of the playfulness and love of sport of the cubs. Indeed, Dr. Hornaday rates playfulness as the most noticeable trait of all bears in captivity. Play is characteristic of young bears almost as soon as they can get about at all, but then it is also a trait of all young animals. Recall the domestic animals you have known, such as puppies, kittens, old Dobbin in his colthood, and the white-faced calf out in the meadow. Coyote and wolf cubs are just like puppies; panther kittens duplicate all the antics of our domestic kittens; and the young deer, elk, and even buffalo cut all the capers that colts and calves do. So it is not strange that black bear cubs are playful. While the cubs naturally are the most playful, still even the adults do not altogether lose their love of play. But we do not see so much of it in the grown animal as his solitary life separates him from any possible playfellows. I have seen an adult mother bear wrestle, box, and tussle with her nearly grown cubs, and act as if she enjoyed the rough tumbling. In September of 1922, I saw a full grown black bear and a nineteen-months-old brown cub having a slow, playful, skuffling and biting match. When the youngster got too rough in his play, his mother cuffed him on the shoulder. It didn't hurt him any but reminded him not to go too far. The mother would sink over backward and try to bite him whenever he tried to climb on her back. It was

a very curious scene, doubly so because the bears seemed so slow and ponderous, and were both so very serious about it.

Although I have never seen it myself, it is quite generally stated by trappers and hunters that black bears like to coast on the snow. They find a long, smooth slope free of rocks, and betake themselves to the upper edge where they sit down on their haunches and let go. Sometimes they lie flat on their stomachs with both pair of legs spread out in all directions, a "regular belly whopper." Usually the snow slopes on the mountains are steep and icy from alternate thawing and freezing: so that the merry coasters soon attain terrific speed if the snowbank is long enough. Some of my informers even go so far as to assert each bear has his own coasting slide and goes to it at least once every day for his sport.

Admitted that treachery is a defect of the black bear, curiosity is the redeeming feature of all our bears, the lordly grizzly as well as the smaller black bear are so chock-full of it that I personally would rate it ahead of even playfulness. Yet it isn't always possible to tell where playfulness leaves off and curiosity begins. One of the first things we notice when we go camping in the Yellowstone is the frequency of bear tracks made in the night here and there and all about the camp. Often the bears are after food, but they do the same thing even when they do not touch the food that is readily available. And it isn't only in camping places that bears study people but even in the woods we are subjected to many a

close unconscious scrutiny. I have often had bears follow my trail through the forests. I do not know how often they may do it without my finding it out, but sometimes I get suspicious and actually catch them at it.

One day I was approaching the Lone Star Geyser and I stopped on a little knoll in such a position that I could look back along the trail. After about fifteen minutes had elapsed a small black bear came into view. He was apparently sniffing along my trail, stopping at every place I had stopped, and carefully investigating every turn and side step I had taken. On October 24, 1920, I was scouting through the forests near Old Faithful in about five inches of fresh snow. An hour later I rejoined the route I had just come over intending to backtrail for four or five miles. Imagine my surprise to find bear tracks exactly paralleling mine. Every point where I had stopped to examine a tree trunk, bruin had stopped also, and every place I had rested, there the bear had also stopped. If I had not known the ways of these ursine investigators, I might have imagined many things and finished my trip on the run, for I hadn't even an axe for defense.

Many times I have had a bear approach me closely when he could see me but could not make out quite what I was doing. Usually if I stood perfectly still, the curious animal would forget his inherent shyness and timidity, and let his curiosity overcome his caution. At other times, I have seen one nose over a camera that I

had left in the woods on its tripod, or examine minutely a stool I had been using in my photographic blind.

One beautiful evening in June I was fishing along the Gibbon River for rainbow trout from a place where there were waist-high bushes along the bank. I had been exasperated by my own ill luck and so when I got a good rise I struck viciously as it looked like a heavy fish. Of course, since I had expected to hook a large fish, I was greatly surprised to see my hook leave the water with an insignificant little troutlet attached to it. The trout shot up over my shoulder in a beautiful arc and descended into — the wide-open mouth of an enormous black bear that had stolen silently up and was standing in the low willows twenty-five feet behind me. I feel confident that he was merely curiously watching me and what I was doing; but seeing the fish coming his way, concluded he might as well gather it in. Fortunately my trout left the hook just before it reached the bear, otherwise my catch might have been larger! And I surely was not equipped to tackle a fish of that size.

Even the grizzlies steal up on us unaware and watch us when we are fishing. Once or twice I have turned about to find a big fellow staring curiously at me, and as a grizzly's face is much more expressive of his emotion than any other animal I know, the interest and curiosity was plain to see. Still more often I have afterwards found by the tracks he left, a place where a grizzly had stood and watched me, while I was totally unsuspicious of my audience. And once I was trout-fishing

with a friend along a stream bordered for thirty feet back with thigh-high Labrador tea bushes, while back of them the willows rose somewhat higher. Lunch-time came and I wanted a camp fire, so I climbed a small, nearby knoll from which I could overlook the stream and its meadows. Suddenly I noticed a movement in the willows, and soon made out a grizzly stealing quietly towards my friend, Jack. As the bear reached the edge of the willows, he stood up on his hind feet and watched Jack. He followed every move of the fisherman with intense interest; when Jack was still, the grizzly's great head wagged slowly from side to side, but every time the fishing rod moved his eyes and head followed it. Whenever a trout broke water, the interest became intense, and whenever a fish was caught I could almost see the big animal's excitement. This kept up for possibly twenty minutes, every time Jack moved on, his audience moved too. Suddenly, without any warning whatever, the bear seemed to lose interest, sank down on all fours, and quietly withdrew although occasionally rising to see if he was followed. When I rejoined him, Jack knew nothing whatever of his curious audience.

Another time I was treated to an amusing scene. I was just finishing a tour around Yellowstone Park and was close to Mammoth when a large black bear and two cubs crossed the road in front. I wanted to watch them, so I dropped off the bus and let it go on without me. The bears ambled slowly on until they came to a sprinkling nozzle. It seems probable that the hum of the rush-

Photograph by M. P. Skinner

Asleep on a limb and seemingly in danger of falling off

Photograph by M. P. Skinner

Sometimes bears sleep standing up on a limb with chin resting on another

Photograph by Edmund Heller
© Courtesy Roosevelt Wild Life Forest Exp. Sta.

Bear resting astride a limb in a grotesque position

Photograph by M. P. Skinner

Yearling cubs sleeping among the thick branches of a pine

ing water excited their curiosity first, for the old bear approached it very cautiously while the cubs stood up with one paw on the mother's back, the better to look over and see. As the hum seemed to come from the nozzle, she gingerly extended a paw and touched the stream. Then, it became evident that she had not known just what it was; for, with the hiss of the water through her claws and the splatter of huge drops in her face. she rose on her hind feet in astonishment and almost fell over on her back. She escaped that catastrophe, however, but her two young hopefuls didn't; they had maintained their pose each with one paw on her haunches, and when she rose up, she unceremoniously spilled them in a pile on the grass. Now it so happened that the nozzle was supported by a forked stand and the stream was shooting up into a tall pine near the Rangers' Community House. And the first thing I knew, the bears were climbing the tree, up into the spray. About ten feet up was a big limb. Out on that they went, one after the other; and there they sat in the dashing water for at least ten minutes.

I have taken some grizzly pictures, usually near a carcass, or a well-used bear trail, but the results were few and not good, chiefly because Old Eph did not move around much until the sun was so low that the light was very poor.

One of my friends tried to get a flashlight picture with a set camera whose trigger was attached to a string stretched across the bear trail. He informed me the

bears were seldom fooled by the string. Finally, an old one with cubs did actually walk into it, the flashlight flashed, and the camera shutter winked. My friend in a handy tree was just congratulating himself on his success when he noticed that the bear was on her haunches growling angrily and looking for an enemy. Apparently the sudden flash had blinded her for a few moments. But it was only temporarily, and she caught sight of the flashpan—biff! Her right paw smashed it flat! Biff-Biff! And the camera was wrecked! Now I didn't care to get my cameras bear-handled, but I resolved to try the flashlight method myself. I placed the flash-pan rather high on the side of a tree trunk, and set my camera with only a short string on the lever, intending to hold the other end in my hand. To save the camera from bear paws I rigged a pulley arrangement with cord near my hand, so that I could haul it up out of harm's way on short notice. At the point focussed on, I stretched a ten foot cord across the path, fastening each end to a stake. This cord was merely to stop the bear in range of my camera. I planned to arrive just before sunset, wait two hours, and then leave before it was entirely dark so that I would always have a little light to see by.

The first bear was a shaggy old monster who evidently smelt my string ten feet away. He stopped and for some moments peered here and there through the forest. Finally he passed around the string out of range of my camera, and then I noticed he was following my own

foot scent! I hadn't thought to conceal myself and so was in plain sight. But as long as I remained still the bear could not make me out. He kept looking at me searchingly and advanced very slowly. Finally, at twenty feet from me he stopped, and stood up with his face fairly radiating curiosity, his eyes twinkling, face muscles twitching, and his delicate nose sniffing eagerly now here, now there. For three minutes we faced each other, then he slowly dropped down on all fours and moved off, only to return again and again and go through the same performance, before finally going off.

Profiting from this encounter I focussed the camera at a point ten feet back of the string and sat down on a handy log to wait. It wasn't long before three three-year-old bears came down the trail together. The leader stopped short of the string and slowly moved forward to within five feet of it while his two companions edged near to see what was going on, then stood up on each side of the leader's haunches. I snapped that one and mentally labeled it "Curiosity," but—the flash powder worked unevenly and, when developed, the plate had only the dimmest of outlines on it. Strange to say the bears were not alarmed at the flash, and there they stood all in a circle facing each other as if questioning: "What was it? What happened, anyway?" Finally they moved forward to study the string, nosed all along that to each stake, dug them up, smelt them all over, and then suddenly raced away down the trail as if Satan himself was after them.

I had hardly reset my apparatus, when an old lady bear and two cubs came along. Perhaps the same one that had so effectually disposed of my friend's camera. She didn't come within range of mine, but turned off to one side. Then she came to the route I had just followed and slowly trailed it up towards the camera. Naturally I was thinking of my friend's experience and wasn't taking any chances; so when she was within five feet of it, I pulled my cord and I was really proud of the way that camera rose like a bird taking wing.

As for the bear, the camera's marvelous flight was so totally unexpected that she promptly fell over backward, while her cubs followed her moves exactly, even to tumbling over backward in astonishment! After the bears had retired and the camera came back to earth I reset it, and waited once more. Before long I noticed a grizzly coming through the forest from the right and not on the path. As he passed close to the camera, he saw it. He turned and came forward slowly, carefully. He had exactly the same motions that a good bird dog uses in drawing up on his quarry. Gently, very softly, and very carefully he put down each foot as he moved slowly forward, eyes fairly gleaming with curiosity and excitement. Again the camera flew skyward, and this bear decamped even more promptly up the trail. That was about all that night; I hadn't secured a single concrete picture but I had received some vivid mental photographs of inquisitive bears that strongly strengthened my previous idea that it wasn't idle curios-

ity so much as it was investigation, keen, intellectual, and almost human.

Many of the anecdotes I have given are surely indicative of an adaptive intelligence. Of course, some bears show it more than others, for a bear, in addition to being intelligent, is also individualistic.

I know of nothing that gives one a better idea of bear sagacity and cunning, as well as individuality, than to trail up an old grizzly, wise in his years of discretion. To trail such a big animal by his tracks in the snow seems a simple task. And so it would be if it were not the track of a resourceful, intelligent animal with limb and wind sufficient to carry him anywhere he may elect to go. Old Eph cannot be treed, and he will not travel in circles, or follow any other rule that gives one a chance to forestall or get ahead of him. Grizzlies that are followed use their brains all the time and apparently never become panic-stricken. They can travel the roughest of rocky, mountainous regions with surprising agility and speed. And, furthermore, the following of a trail and working out its tangles, its turns, its counter-turns, and its various eccentricities is a liberal education for the trailer. He who matches himself against this past master of woodcraft, he who pits his skill, his care, and his endurance against the grizzly, will learn much, will acquire much new respect, for bruin. And in the learning will enjoy much in the way of entertainment and satisfaction.

When I was but a boy in college, I began hunting the

grizzly. I learned a great deal of him, of his ways and habits, of his courage and sagacity; and I learned to respect his sturdy qualities. I persevered, at times I was successful—more often I was not. I steadily acquired woodcraft; I often returned to camp dirty, wet, and tired out, but I never regretted those days in the forest. As for the grizzly, I began by respecting him and then I came to admire him. For many years now I have not used a rifle; sometimes I take a camera, but more often I spend days studying the great bear, and still my wonder and respect increases the more I learn. I have found that the trailing of Old Eph, wise and wary in his old age, is the most difficult, the most exhaustive of all wildwood tests.

One autumn when the snow fell just right and lay two or three inches deep for five days without melting, or crusting so as to be noisy, I took a blanket, a little food, a light pack, and a camera to track down a grizzly. I found his trail in a small meadow where the remains of a squirrel burrow still covered the snow with fresh dirt and the long grass was still rising from bruin's footsteps in a way to indicate only two or three hours' start. He was not traveling fast and I had high hopes of catching up. Soon after I started I noticed that most of the time he traveled into the face of the wind. This, of course, was to be informed of what was in front of him as far as possible. In a way this made my work lighter, for any noise I made could not so readily reach those keen ears and no telltale scent could give me away.

But Old Eph knew that as well as I did and it made him still more watchful of his rear; in fact, he apparently never felt safe about his back track and was always alert to possible approach from that direction. As the day wore on, the snow told me that he frequently stopped and rose on his haunches to look and listen and probably to sniff in all directions. Since the snow was fairly well melted in such places from the heat of the body, it was evident he spent many minutes in each survey, although I was quite sure it was not until two days later that he felt he was being followed. If these ordinary investigations did not fully satisfy him, he made a slow circle, stopping whenever he saw something he wanted, but, nevertheless, eventually getting back across his trail before going on again. Once or twice during the day he back-tracked along his trail, possibly to see if all was well. He did not by any means travel straight away, nor even in any general direction. He was unalarmed, he was attending to his ordinary business of securing enough to eat; he cropped grass, he dug mice, squirrels, and woodchucks, he tore up logs, and he overturned many stones. But, as a grizzly habitually does, he watched his back track to prevent surprise.

On a small plateau where almost every stone was turned, he crossed and recrossed his own trail so repeatedly I could not follow its tortuous ways, and only by making a big circle myself could I pick up the onward trail again. At times he climbed a rock or a hillside to look back, and again he turned at right angles

to his trail for a sufficient distance to have sound or scent come from his back trail. He used a number of methods to deceive anyone that might be on his trail, so that I could not foretell what was coming next. Sometimes he went straight across an open meadow or "park" only to "stop, look, and listen" in the far edge of the woods; sometimes he passed around the opening to the left, sometimes to the right; and once or twice he right-angled in the middle of a meadow and went out to one side.

Although years of trailing and tracking had long since raised me out of the novice class, I could not foresee and anticipate his movements, and I had to risk his seeing me in the openings, or else lose time circling to pick up his trail again. On the third day his trail started diagonally down a canyon wall and I assumed he was going to the bottom, and accordingly let myself down over an easier course than his, to the creek. Failing to cross and pick up the trail there, I was obliged to climb back. There I found the bear had gone two-thirds of the way down, then turned sharply and climbed to a shelf and bedded down for several hours. Afterward he climbed to the ridge, went back a mile, recrossing his old trail, then down to the creek bottom, and, turning away from his previous course, climbed to the far ridge and on again. But now he seemed to be aware I was following, and I believe he had seen me in the gulch, for I crossed the creek so soon after him that his tracks still contained muddy water. I followed him two days longer, but he did not vary his tactics at all except to travel fast

enough to keep well ahead. I actually saw him twice during the last two days, neither time within rifle shot, and still more hopeless for my camera. At no point did I outwit him completely, and he defeated most of the plans I made to cut across on his trail and forestall him; yet he did not seem to eat less than usual or to hurry to any extent.

Although the grizzly is usually accorded a greater degree of intelligence than the black bear, the latter often exhibits a talent comparable with the bigger bear at his best. In the spring of 1917, a tiny black bear and his mother made their appearance at the West Thumb station then governed by a detachment of soldiers. There was nothing about the youngster to attract attention, and I certainly never gave a thought to the celebrity he was soon to attain. He was just a chubby little roly-poly black bear normally hungry. The soldiers amused themselves by making the cub sit up for tidbits, not at all a difficult accomplishment to teach a cub, for they naturally rise up on their hind legs for anything that is out of reach. But this little cub was bright and cheery and always ready to show off his accomplishment to anyone who had something for him. All through that season and the next this cub was a regular visitor to the West Thumb. In the spring of 1919, the half-grown cub came again but without his mother, although he was still very ready to sit up and beg whenever he was asked. Very soon after this, he formed the idea that all human beings had food and would reward him, so

he began to sit up beside the road whenever he saw an auto approaching. Apparently he found that a good many autos passed without seeing him, because he soon began to "do his turn" in the middle of the road, perhaps at first through pure accident, although it certainly looked as if he had reasoned that the road was the more conspicuous place and that no car could pass him there without seeing him. From that time on he stopped cars, both private machines and the big yellow auto-busses, regularly, and soon earned for himself the names of "The Holdup Bear" and "Jesse James." He even achieved to the enviable height of being mentioned in the official Report of the Director of the National Park Service for 1919. As a rule, visitors were willing victims of the holdup; and most of them would risk whatever danger there was, rather than turn a deaf ear to demands for crackers, cakes, candy, popcorn, and bits of meat. Jesse continued to ply his trade all through 1919, and, as it is so often with successful genius, he soon had a host of imitators. That these imitator-bears could acquire such a trait — and they are still plying their trade in Yellowstone National Park successfully — is almost as remarkable as the intelligence that created the first Jesse. I do not even venture an opinion as to how the knowledge spread, but it would certainly seem that intelligent imitation, if not actual reason, had its part.

Surely, we can see in the above account, that bears have some way of intercommunication. For here is a

© *Otto Theobald*

The hold-up bear of the Yellowstone

© *Otto Theobald*

The bandit at work

© By J. E. Haynes, St. Paul

Willing victims of the holdup

new trait that could not possibly have been handed down from mother to cub, because bears never did it before, so far as I know. Yet the knowledge spread quickly and effectively.

Is it not reasonable to suppose one bear can communicate ideas to another? The thinness of the skin over his face, its fine modelling, and the position of his eyes and ears, all help to confirm the promise of the broad head and massive brain that here is an animal of intelligence, and an intelligence that can express itself. Combined with a mobile face and ears, is a neck capable by its position and outline of expressing still more. I wonder how many of us realize how much a bear adds to his ability by the mere power of rising on his hind legs? That puts him more on a par with man and by the very rising, itself, the bear shows astonishment, alertness, curiosity, and wonder. While the fore paws, released from their duty as mere support, indicate by their position curiosity, defense, playfulness, and readiness for whatever may happen. Really, it is no exaggeration to say that a bear is not only intelligent but that he has wonderfully expressive ways as well.

In addition to pure mechanical expression, he has a voice well adapted to tell us his wants and feelings as well as his dislikes. While almost all observers speak of his calls, his growls, and his snortings, unfortunately we know little of what they mean, except that they sound so very human. When a tiny cub is hungry, it begins

to whine and wag its head, thrusting its little nose up and down, it made an appealing, plaintive, almost human call. . . . . The sound of his wailing was startlingly like that of an infant; anyone unaware would have said that a child was in distress.[20]

When he grows older, a bear's growls, complaining whines, self-satisfied grunts, coughs, shrill howls, and startled snorts of rage all tell us readily what is the matter. When he is hurt, he cries and moans in pain much as most men would do under similar circumstances.[21] On occasions, he can shed tears as promptly and copiously as an artist of the silent drama. When he fights, he snaps his jaws together with a mighty ominous clank, loses his temper, and bawls like a human bully.

Almost the first thing we learn about bears is that there is a code of signals, a system of communication from a mother-bear to her cubs. Certainly she can tell them when to scamper up a tree, and when to come down again, often when she is on the ground and her cubs are fifty feet up in a tree top. In addition to using her voice, she sometimes scratches the butt of the tree as a signal to come down.

Wherever there are bears in any number we find curiously marked trees scattered throughout their range. These bear trees possibly act to convey news from one

---

[20] UNDERWOOD, WILLIAM LYMAN. *Wild Brother.* Pp. 17, 26. The Atlantic Monthly Press, Boston. 1921.

[21] MACFARLANE, R. *Proc. of the U. S. Nat. Museum*, Vol. XXVIII. Pp. 721-722. Government Printing Office, Washington. 1905.

bear to another by sense of smell, but some writers have gone so far as to describe these trees as "challenge" posts. They have even said that the bears that made them claimed the adjacent territory as theirs and chased all other bears out. But if a bear came along that was tall enough to reach higher and make a mark above the first bear's, then this new bear claimed the land rights and the first one rushed away in terror of the usurper who was presumably larger and stronger. This is all very pretty as a theory and has secured a wide circulation; but, unfortunately, it is not supported by the facts. I have seen many of these trees, but they did not keep out other bears at all. Indeed my experience has been the more marked trees, the thicker the bears.

But whatever the correct explanation may be, it is true that in all sorts of places and at all sorts of times, bears will back up to a tree, then rear up against it on their hind legs, back to the tree, and stretching up their noses to the farthest limit, rub them there crosswise of the tree trunk. Then they rub their heads, necks, and backs against the tree, both with an up and down motion and crosswise, and even at times a rotary combination of the two. A great deal of hair and, if the bear is as muddy as he often is, a smear of mud is left behind, to cling with its load of bear smell to the rough bark. A bear's power of smell is so keen and sensitive that it seems certain that another one coming to such a marked tree can tell by its odor just what bear preceded him. Whether that bear was a male or female,

a friend or a foe, angry or sweet tempered, well-fed or starving, and much other similar news that we with our duller sense of smell cannot even guess at.

The first bear that I ever saw mark one of these trees, a small pine sapling, was a black bear with two cubs. That she was truculent I could see from the tone of her growls and the short jerkiness of her motions somehow suggestive of a pugilist "looking for trouble." She was near some other bears feeding on carrion, and in plain sight of them. After rubbing her tree up and down for possibly three minutes and ending by stretching up still farther and rubbing the tip of her brown nose across the tree as high as she could reach, she sent her cubs up another tree and walked over to the other bears growling at them rather grumpily. None of these bears paid much, if any, attention to her, either when she was issuing her "challenge" or when she came up to them. After a few seconds of uneventful waiting, she secured a position at the feast and soon all were feeding with no more disturbance than is the case normally. The next time I saw the act was just after a bear, this time a male, had been driven by other bears away from one of Yellowstone's bear piles. After he was out of sight of them and over a slight rise of ground, he picked out his tree, marked it well, and then went back to the pile where nothing unusual happened. A few minutes later another bear passed the tree, saw it, but paid no attention to it.

Another time a medium sized bear was driven from

a carcass by a large bear and moved off reluctantly. When about sixty feet away, he reared up and marked a small pine, and then retreated with hair bristling and many halts, rising occasionally on his hind feet to look back. Almost immediately a smaller bear appeared from the direction the retreating bear had just taken. This small bear noticed the tree, smelt it all up and down, but was so little concerned that he actually sat down under it to wait until the large bear had finished at the carrion. Although all these instances happen to relate to black bears, still I have seen grizzlies do exactly the same things in exactly the same way.

Now I knew at the time that all these "markings" were supposed to be challenges, yet I must admit I could not see that they had that effect. In each case the bear was evidently in a bad temper, and I have no doubt the trees told the other bears so, but they certainly were mighty indifferent to them as invitations to fight. Furthermore, I have seen other instances where nothing had occurred to rouse the temper of the "challenging" bears and they showed no indications whatever of being in an ill humor. I have often thought that these bears enjoyed the mere acts of stretching out and scratching their backs, and I know they sometimes stop to scratch their backs and heads on low limbs. I have even seen them override small saplings in evident pleasure of scratching their stomachs. These instances, coupled with the times I have seen a bear surging to and fro under a half-fallen tree and evidently rubbing his back, sug-

gest that at least some of the trees may be "marked" when the bear was merely enjoying a pleasant sensation for its own sake. Again, I have seen bears in captivity use exactly the same motions against their cage walls especially in hot weather when one would suppose scratching to be a pleasure.

CHAPTER VI

THE LONG WINTER SLEEP

IN LATE summer, our bears begin to grow fat, some of them ludicrously so. As the nights grow longer and longer, and the sharper frosts of coming autumn begin to color the geranium leaves, the fireweed, and the aspens with all their glowing shades, the big bears, both black and grizzlies, become restless and make long trips in all directions through the forested mountains. It is then that we see their characteristic trails leading away for miles through the somber forests recently whitened with the first snows. In certain kinds of country these trails are straight and farreaching; in other places, they are as crooked as they well could be, zigzagging in and out and crossing and recrossing in various patterns of circles, oblongs, and lazy loops. Perhaps the bears are not fully conscious of why they are urged on by this instinct but they investigate every cave, hollow tree, etc., that they can find in their travels. And if not in suitable country, they travel steadily onward until they do get into a more favorable section. Bears that have had a den before, and cannot find a better place, may return to the place they occupied the winter before. But even these bears make long trips and do much searching before they do decide the old place is

the best one after all. Both the bears that have winter slept before and those that have not, are being urged on by instinct to hunt out a comfortable, secure retreat where they can sleep the long winter through from November to March, or to use the proper scientific term — where they can hibernate. This winter sleep in a dormant, torpid condition without food or drink is peculiar to many animals but the bear is one of the few carnivorous species to adopt it. To us, the bears are the most striking example, both because they are large and because our interest in them has already been aroused by other peculiar traits. Somehow the hibernation of woodchucks, squirrels, and various rat-like animals does not strike us as so remarkable. Even when we know they do it, it causes only a slight amount of curiosity and interest. But in bruin's case, it seems much more peculiar and noticeable.

Grizzlies select dry and warm locations in the mountains above 7,500 feet elevation for their dens, usually digging them into dry slopes. If they find a natural cave they may use that, but if they do not find a natural opening that they like, they dig one that may be either shallow or deep, for themselves. I have never found a grizzly den in a hollow tree or in a hole dug vertically into more or less level ground. On the other hand, the black bear may use a natural cave or dig one resembling a grizzly lair, but he will also use a hollow tree or a hole in the ground, or even curl up beside an upturned tree root or under a windfall and let the win-

ter snows cover him up. I have even seen a winter den on top of the ground under a Douglas fir on the Mammoth formation where the branches were thick and close to the ground. Outside of Yellowstone Park black bear dens are much more apt to be in swampy places or in dense sapling thickets. The Yellowstone does not furnish many swamps for bruin's convenience, but it does have some unusual facilities in the way of old hot spring and geyser openings, and many a bear has slept in the caves formed by the tumbled rocks known as "The Hoodoos" near Silver Gate.

I even knew of one den near Boiling River where there was not only a capacious sleeping chamber, but it was heated to a pleasant temperature by warm steam coming up through a crack in the floor from the hot water below. I do not know that these naturally steam-heated apartments are any more popular with the bears than the ordinary kind, but I am quite sure their inhabitants survived their unusual winters quite as well as the more orthodox members of the species. Speaking of apartments reminds me that bears have been known to sleep in the basements and under the lowest floors of the big Yellowstone hotels, especially the old Fountain Hotel at Lower Geyser Basin.

While a natural cavern might be large enough for several bears, there is no record of more than one using the same den except where a mother sleeps with her yearling cubs, or all the cubs of a litter sleep together before finally separating the following spring.

When a black bear has found, or made, a den to his liking, he will usually carry in quantities of dry leaves for bedding. Sometimes these are collected at some distance and carried to the den. When the sleeping quarters are ready they are often left unoccupied for from one to three weeks or until the proper time to retire has arrived. There are some members of the tribe who put off making their den until too late, and then they are forced to do the best they can with a partly finished home, or to use any makeshift they can find.

The time when bears begin their winter sleep varies a good deal with season, weather, snowfall, sex, altitude, abundance of food, and other conditions more obscure to us. The pregnant female bear always retires earlier, sleeps sounder, and is apt to come out later; for the young are born while she is asleep and Nature provides that she remains in the den with them for the first two months of their life. As a rule, the temperature and weather are the most important factors. Here in the Yellowstone, the average date of the last bear seen in the autumn has been November first, but the majority of the ursine population retires between the tenth and twentieth of October. Perhaps the bears at higher elevation retire at an earlier date than the lowland members, but I have no data that proves it conclusively. As the bears have a good three inches of thick warm hair to cover them, and often a layer of fat four inches thick as a further warm covering, it does not seem likely that the few degrees of tempera-

ture due to an additional two or three thousand feet of height above sea-level would have any perceptible effect.

When a wild bear enters his den, he is uneasy for some time, in a very drowsy condition. I remember once finding a bear's den and the insistence of my companions on waking him up "to see what he would do." It was only a few days after he had entered his den — indeed, it was by following his tracks that we had found him — and we did not have long to wait on his majesty. Not more than three or four prods of a long stick before we heard angry growls, and a big, black fellow came angrily rushing out. Trees were handy and we made fast time to the lower branches; but fortunately for us, the bear was too lazy to come after us, and soon wandered off to find another den. But as Mr. Underwood says, it is much more difficult to waken the sleeper at a later period and, as time goes on, dormancy becomes more and more profound, and the chest moves gradually slower and slower and the breath becomes less. In fact, it becomes so slight that it seems almost to stop, but we see mist rising from a den whenever we find one in very cold weather and we know this to be a sign that water vapor and carbonic acid at least are given off, although it is true that some of the mist might be due to the lessened animal heat melting a little snow and the consequent evaporation. Then again, hibernators lose a considerable amount of their weight, and, as no solid matter is voided, we know that the lungs must move to force out this loss as water vapor and gas.

I have many times found woodchucks, and even bears, hibernating in openings on the formation at Mammoth Hot Springs where I knew the suffocating carbonic acid gas to be present; but these animals came through the winter all right, although this same gas in these same holes sometimes kills the same kind of animals if they get into them during the summer. Although I tested the gas again and again in these openings I could hardly convince myself that animals had actually hibernated in it. And only when I heard that dormant woodchucks had hibernated safely in carbonic acid in the laboratory, according to Beebe, did I become reconciled to my own observations.

With decreasing respiration, the heart beats of the sleeping bear become slower, the digestive organs shrink and contract until they are but a fraction of their normal size, and the lungs move more and more slowly. In some cases where I have located a den and returned to it later, I have found that the occupant had roused and left in spite of my having tried to make no noise at all during my visit. Yet the bear apparently knew I had discovered his hiding place and had used the first opportunity to search out a securer one. Except where so disturbed, the bear remains in his den throughout the winter without food of any kind, for he takes nothing eatable into the winter den with him.

When spring comes around again and the proper time for awakening is near, the animal heat of the sleeper becomes greater, the heart beats faster, the breath quick-

Photograph by M. P. Skinner

In late summer most bears become ludicrously fat

Photograph by M. P. Skinner

They are also restless and make long trips

Photograph by M. P. Skinner

This little fellow scampered up a tree

ens, and soon all the bodily processes are functioning properly. Although the animal has been through a long fast, he does not *look* any thinner than in November. But hunters and trappers tell me that if killed at the time of emerging, the fat is spongy and, although as bulky as ever, it is light in weight and no grease can be obtained from it by "trying out." It would seem that the substance, the strength, has been used up as winter fuel; and in this way laboratory tests showing lost weight are borne out. That the bear rapidly loses this spongy fat and becomes thin about two weeks after emergence, is further proof that it is not of the same quality as it was in the autumn.

On March 26, 1923, I was so fortunate as to see a black bear actually leave his winter den. It was near the mouth of Boiling River at an elevation of only 5,500 feet above sea-level and at a point where there was comparatively little snow. At the time, most of this snow had disappeared and there were large patches of bare ground in all directions. The bear seemed very lazy, almost dazed in fact, as he emerged. He sat by the mouth of the den, swinging his head slowly from side to side for about five minutes, then he walked aimlessly about, always within fifty feet of the den, for another five minutes. Then another squatting rest for ten minutes and back to his hole. He neither ate nor drank anything, and did not seem to want to. He enjoyed the sun's warmth, I think, but he did not seem to care when a passing cloud cut off the rays. Two

days later, without coming out during the interval, he left the den for good, drank a little water, ate some willow twigs and grass, and scooped out an ant hill. A day or two later he carried off a dead deer that had been lying within two hundred feet of him for two weeks or more.

The bear just mentioned came out a little earlier than usual, for while the average date of appearance of the first black bear in Yellowstone National Park has been March twenty-four, still the majority of the ursine population does not come out until more than a month later. But the Boiling River bear, in common with all the first comers, was below 6,500 feet elevation. If the bears sleeping at higher elevations do emerge as early as those at lower altitude, they evidently make haste to get down to the lower elevations where the sunlight is warmer, where vegetation starts sooner, and where insects are more plentiful. But I believe the winter dens at higher elevations are occupied to a later date, and that is why we do not see grizzlies — who usually den higher than the black bears — until a later date. The early bears are almost invariably full-grown male bears, and neither females nor cubs come out so early. Undoubtedly an early or a late spring affects the end of hibernation, but I have not found that the actual melting of the snow had anything to do with it.

Young black bears stay with their mother and sleep with her the first winter, or until they are over a year old. Then they are rather harshly repulsed by her and

made to understand they must set out and provide for themselves. The next winter, usually all the cubs of a litter den up together; but after that, they separate, and, so far as I know, always winter sleep alone, unless they are females and become mothers, for the rest of their lives. The grizzly cubs stay with their mothers one year longer as a rule than the black bear cubs do, and are even more apt to den one year together after leaving their mother.

Black bears reach maturity when three years old, but often continue to increase in size and weight for several years more. The grizzly reaches maturity a little later but will breed when three and a half years old, although not reaching full size until over eight years old. Aside from their age, bears vary a good deal in weight. Some are small and never grow much larger than three-year-olds; some grow fast and reach full weight at an early age; others grow much slower, and while they acquire great weight eventually, they are not full size until comparatively late in life. The average mature black bear weighs from two to three hundred pounds; quite possibly some of the largest, fattest Yellowstone bears may reach five hundred pounds. The average grizzly that we see now weighs only from three to four hundred pounds. While it is true that specimens of over a thousand pounds have been known in the past, it is very seldom that one is seen nowadays even approaching that weight. They would still grow as large as ever if permitted to do so. But a grizzly develops very

slowly, and usually long before he has attained full size at an age of fifteen to twenty years, he has wandered out of the Park and beyond its protection, and has been trapped or killed. In fact, it has been years since I have seen a bear in the Yellowstone that I could conscientiously estimate at over six hundred pounds.

While full-grown grizzlies are undoubtedly much larger than black bears, one should not call all large bears grizzlies merely because of their size. The black bears grow so much faster than their more noted cousins, and are so much more numerous in the Yellowstone, that the chances are greatly in favor of one's biggest bear being a black bear rather than a grizzly.

CHAPTER VII

MOTHER LOVE AND THE CUBS

IN JUNE and July, the male bears find the females and mating occurs. The marriage tie is a very loose one for the pair do not stay together very long, probably not more than a week or two, and then separate for good. Not only have I never seen a family — that is, father, mother, and cubs together — but I doubt very much whether a father ever sees his own cubs to know them. And I am quite sure that two adults do not mate together a second time except by pure accident and the lack of rival mates. Normally, black bears breed every two years and grizzly bears every three years; but if anything happens to all her cubs, a female bear of either species may breed two years in succession. Since such a union would be contrary to all the traits of the animals, I doubt very much whether a black bear and a grizzly have ever mated together, at least in a wild state.

When the denning time comes around, the pregnant bear takes more care in selecting a snug, cozy den than other bears do. The young cubs are born in January or February, and the usual litter of cubs in the Yellowstone National Park is two, but occasionally there are three youngsters, and sometimes there is only one.

Once I was camped on the headwaters of the Gallatin

River in the northwestern part of the Park in May, and there I found *five little grizzly cubs* running around in the mountain sage brush with only one old bear in sight, and to whom they all seemed to belong. It was a most unusual sight and one that I have never seen repeated, nor have I ever heard of a similar case. At times since, I have wondered if she had not adopted another family along with her own. Yet, when I remember the usual extreme jealousy of the average mother grizzly, I become doubtful. But the fact remains, nevertheless, that there were five cubs, all the same size and all following the same female grizzly with not another bear, or sign of another bear within miles, for I searched carefully.

At birth, the young bears, both black and grizzly, are only nine inches in length, and the contrast between their tiny, puny, naked selves and their great three-hundred-pound mother is amazing and almost unbelievable. Furthermore, they are so undeveloped that their eyes remain closed for about forty days and they do not leave the den until two, and sometimes three, months old. During all this time, the mother remains asleep, but the youngsters instinctively know where to find their food and her bodily heat helps to keep them warm. At the time their eyes open they are not yet able to walk but can wiggle and push themselves about to a limited extent; their length has increased to about twelve inches and their weight to about two pounds; milk teeth just begin to appear through the gums, and the cub is now

well covered with a soft, velvety wool. All the cubs I have ever seen at this stage of their lives have been black, but many of them gradually change their tint and become lighter colored, or more grayish in the case of the grizzlies. This change does not depend on the color of mother or father, that we know of, and twin brothers and sisters are often very different in color. By far the larger majority of the black bear cubs have brown noses by the time they are weaned and a few have white breast markings. I have not been able to determine the matter from my own observations, but some authorities believe the brown noses and white breast marks are more or less hereditary.

When two months old, bears begin to walk, and weigh a little over three pounds. About this time the mothers are ready to lead them forth, although sometimes she goes out alone the first time for a short survey of the country, maybe not taking the cubs until a couple of weeks later; but often she takes them along on her very first trip. At this time they are big enough to stand erect on their hind feet and even to climb expertly, and the mother bear appears excessively proud of them, leading them everywhere, teaching them all sorts of things, how to dig bulbs, how to catch mice, where to find ants, and how to knock frogs out on the bank. In addition to what she teaches them, the little fellows know a good deal about food instinctively. Mr. Wright tells of a cub he caught as the mother emerged from her den, and raised by hand.

One black bear cub that I took in this way I kept with me all through the summer and fall hunting, having caught him early in June, in the Bitter Root Mountains, when the ground was covered with snow and when he first came from the den. He was then a little fellow not larger than a common house cat. . . . . This cub I took about with me all over the mountains for more than four months, and I learned many a thing about bears from him. Whenever, as he grew older, we were in camp and he wished to get loose, as he would show by pulling at his chain and bawling, I would free him, and then follow to see what he was after. He invariably made for some bottom land and dug for roots, or nipped off the grass where it grew young and tender. I have seen him dig more than a foot down into the ground for some root that had not yet sent up its shoot, and —although how the young rascal could tell just where to dig was beyond me—he always found his tidbit. Moreover, he knew the berry bushes from the others by the same inherited knowledge. He would reach up and pull down the branches of these to examine them, although there might not be any berries on them at the time, and he never, that I saw, made a single mistake.[22]

These small black bear cubs are intensely interesting, very mischievous, frisky, lively, and full of playful pranks. But their mother knows how to protect them, and when she sees or smells danger, she sends them up a nearby tree which they early learn to climb, but they are so curious, that when they have reached a safe limb, they usually slide out on it and sit down with their fat little legs dangling off while they hold to a branch above with one paw, for all the world like little boys.

[22] *The Grizzly Bear*. P. 203. Charles Scribner's Sons, New York. 1922.

I once had an exceptional opportunity of watching the development of two black cubs. The mother of this family watched over them carefully, especially early in the season, although the youngsters were continually getting into trouble with other bears and leaving her to fight out the resulting rumpus often with bears larger than herself. During June and early July, she always sent them up a tree before she approached a bear pile. But even from these perches, the cubs managed to stir up trouble for her. One afternoon this family approached the scrap pile at the Canyon at a time when there were already several black bears about. When the mother sighted them, she immediately reared up for a better look while the cubs stayed well behind and looked on. After a few moments she dropped again to all fours and moved closer, the cubs tumbling after her. At the same moment that she sighted a big brown bear, she sent her cubs up a tree, and then she went for him. As she drew closer to her foe and snarled, the cubs on their perch uttered loud hoarse cries that seemed to excite the mother still more. But the brown fellow growled back fiercely and as he was pretty large for her, she refrained from attacking him just then. A few minutes later she shook herself a bit, then went up and dared the big brown again, but once more she had to back off. The third time she approached the big brown bear, one of her cubs jumped from his tree amid the snarling bears, and this so excited the mother that she closed in with the big fellow. Meanwhile the little provoker seemed

scared at the fuss, as well he might, there in the thick of it, and scampered up a tree that happened to be handy. The two adult bears cuffed each other soundly, tumbled about a bit, and growled; but not much actual damage to either except that the brown bear got his nose skinned. But the youngsters in the tree were wild with excitement and kept up a steady stream of croaking barks. This time the cubs were not allowed to reach the actual dining table, but the next day, with no other bears present, they were permitted to come up. Still, it was ten days later before they were allowed to introduce themselves to any more strangers, but after that they came regularly to the feast with their mother.

Three days after the fight with the brown bear, the cubs were unusually silent during another fight that their mother got into, but they bawled and cried as loud as ever when I came to photograph them in their tree. A week later even this excitement could not stir them up, but an approaching grizzly caused their cries to rise shriller and shriller, as if they recognized in him a greater enemy than in a two-legged camera-man. The next day not even four grizzlies at once could rouse them.

At the same time that they progressed in their recognition of enemies, they developed rapidly in other directions. At the time of their mother's fight with the big brown bear they were as wild as they could be. I could get nowhere near them on the ground, and even in their tree they retreated to its very tip if I but passed under

them. Three weeks later they were so tame they would eat bread and sugar from a tourist's fingers. In a way the mother also had developed. When I first photographed the family I had to watch the mother carefully, prepared to catch up my camera and run at a moment's notice; but as the cubs became more friendly with people, she lost her jealous care to a corresponding degree.

But she did not lose it altogether, for about two months after the brown bear fight, I saw a two-year-old black bear come walking toward them. The cubs' first inclination was to run, but the mother seemed to reassure them and arrest their flight. Apparently she was too successful, for they then advanced towards the two-year-old, walking stiff legged, with ears laid back, and apparently daring him to come on. When he did come on, his tormentors promptly ran and the mother again fought their battle by driving the two-year-old off.

On the other hand, the dispositions of the grizzly youngsters are much sweeter and more winning than that of their black cousins, and they are no less cheerful, playful little fellows and may be even more so. We cannot wonder that the mothers with such bright, intelligent, happy families are ever ready in their defense. To be sure, we sometimes find a cowardly mother. But then a few exceptions only tend to emphasize the grizzly's striking variability. As a rule, she is ready to defend her cubs, always keen and resourceful to get them out of danger; but if she cannot get them away, she will face any danger in their defense no matter what

the odds. During their journeys she is always on the alert, ready at any time to rise on tiptoe and look and listen and question every breeze with her delicate nostrils. And her cunning, imitative offspring will stand beside her, searching the terrain anxiously with their eyes, and sniffing with their little noses in the drollest way. But when mother does get a whiff of danger, she promptly takes them out of it, urging them along with sharp, explosive "whoofs," but not sparing a cuff or two when she thinks they need it, or hurrying them on with spanks from behind. Mr. Vernon Bailey gives an appealing picture of another kind.

We sat on the snow and watched her and her cub climb the slope and disappear over the crest of the ridge. The cub was about the size of a raccoon and could not travel very fast, but the old bear kept only a little ahead of him and anxiously coaxed him along as fast as possible, looking back and encouraging him to follow her at the best speed he could make.[23]

With this constant care and teaching, the little grizzlies increase in size steadily. From an average weight of twelve ounces when born, and five pounds when they first emerge to the outdoor world, they increase to ten pounds when about three months old. Youngsters of this age are still entirely dependent upon mother's milk, but I have seen black bear cubs eat solid food when only five months old, although they are not fully weaned until more than a year old.

[23] *Wild Animals of Glacier National Park.* P. 96. Government Printing Office, Washington. 1918.

© *By J. E. Haynes, St. Paul*

Twin cubs about nine months old. The two noses were of different shades indicating influences other than heredity

Photograph by M. P. Skinner

A male bear leads a lonely life and is never seen with his family

Courtesy Roosevelt Wildl. Life Forest Exp. Sta.
Photograph by Edward A. Bickelhaupt

The mother and cubs stay and live together

At five months of age, black bears weigh fifteen pounds, but after that they grow much faster. Their mother is still excessively fond of her offspring at this age, and is usually ready to fight for them against all odds. Indeed, she carries it to extremes, and becomes as cross and crusty as only a bear can. Curiously, at the same time, the black bear cubs, especially if there is only one, often become as grouchy, as complaining, and generally as unpleasant as the worst of spoiled children. Like human children, brothers and sisters sweeten each other's dispositions and make them the merry, mischievous rascals they are meant to be. When about nine months old the cubs lose their milk teeth and black bears weigh about forty pounds, but the grizzly cubs are still somewhat lighter in weight.

After a family of cubs leaves its mother, the members of it stay together another year, trusting to one of their number the leadership formerly filled by the mother. This is usually the smartest and most dominant member of the group; but I do not know whether a female usually leads as with many other animals, or not. Grizzly cubs usually separate when three years old. Yet one pair of twins that I once followed year after year, stayed together until they were at least eight years old; and I never saw one of them during that time without seeing the other within a few feet. Apparently they were both males, and whether they even sought mates during their comradeship I do not know. This is the only instance I know of grizzly bears, other

than mother and cubs or a litter of cubs between two and three years old, living together. I have never seen cubs of two litters together either in the case of black bears or of grizzlies.

CHAPTER VIII

BEARS AND THEIR ENEMIES

IN A place like the Yellowstone National Park where hunting is absolutely prohibited, bears find a veritable bruin paradise, for man is their one great enemy, and the only one that they cannot cope with.

In a state of Nature, black bears and grizzlies are practically never sick, but always fat and prosperous except perhaps in the spring before vegetable food has well started its annual growth. Sometimes in places where bears are more or less dependent on one form of food, there is temporary famine; but the bears, although lean and ravenous, manage to survive it. Here in the Yellowstone where some kind of food is almost always to be had, there is no record of a bear starving to death. Indeed, it would be a great surprise to most of us if a bear dead from any natural cause were ever found.

When I consider the long list of things they eat, and especially when I watch bears gobbling up all sorts of decomposing garbage, I wonder if their "inwards" are not metal lined and if the animals ever suffer from their indiscretions. Mr. Underwood says his pet black bear cub did have to pay tribute to his appetite. If he ate too much, or too indigestible a food, he had a stomach ache just like a boy with too many green apples.

Lately I have found the same state of things in wild bears, sometimes the mixtures in those "cast-iron stomachs" are too much for them. Like Mr. Underwood's Bruno, the discomfort takes its natural course and in due time, the bear recovers none the worse for his painful experience.

In the Bronx Park, New York, and in other zoos, there is almost always a rule against feeding the bears. On inquiry, I find this is because it sets the bears' dispositions on edge and spoils their tempers. Apparently the danger of serious sickness from the indiscriminate articles thrown into the cages is so small it is negligible; a striking tribute to their power of digestion.

Perhaps the best commentary on susceptibility to disease is the age to which bears live. As we have already seen, this animal is remarkably undeveloped at birth, but grows rapidly. Even after reaching maturity, the animals grow larger and heavier, aside from the autumnal increase of fat. Black bears have been known to live twenty-four years in captivity; but although I have seen wild bears that I thought even older, the average is not near that high. And that is about all we do know, because it is an extremely difficult thing to follow a wild animal year after year throughout its life, and say just when and where it died. Only the actual body will tell us that, and as I have already mentioned, the bodies of bears that have died naturally are literally "as scarce as hen's teeth."

In common with most animals, a bear has his rivals

during courting time and then he may have to fight at almost any time. The antagonists fight in rough and tumble fashion, with a great deal of coughing, roaring, bawling, growls and use their massive fore paws with lightning swiftness in dealing heavy, powerful blows aided, especially in the case of grizzlies, by sharp cutting claws. But even after making allowances for these muscles and weapons and the ugly tempers and primeval passions aroused, there is usually comparatively little damage done to the powerful frames and tough hides of the rivals. Sometimes a nose is skinned, some fur is lost, or at most, part of an ear is torn off. When bears battle with each other, their paws are apt to strike their antagonist's head, shoulders, or body; while they use their teeth only against their opponent's jaws or throat as a rule. They can, and sometimes do, fight on all fours, but are much more likely to stand erect. Aside from the actual blows struck, the fighting is really more like wrestling and a thrown bear acknowledges defeat at once. But the common belief that bears "hug" a rival is without foundation. As a rule, a bear fight lasts less than three minutes.

Although we know that grizzlies are full grown at eight years, we do not know just how much longer they live after that. Since they are so vigorously hunted and trapped when they wander outside the Park, as they occasionally do, not very many live to the ripe old age they would otherwise attain, and we probably seldom see a grizzly more than twelve years old. I have seen

bears that I know to be twenty years old and yet they did not seem more than in the prime of life. And I have occasionally run across an old grizzly so old he walked like a real old-timer, and I have shot them when their teeth were worn down to mere blunt stubs. Possibly these old fellows were not less than thirty years old. We cannot tell much from menagerie and zoological garden experience because the conditions there are so different from a wild life. In a way conditions in captivity are better. There is always an abundance of food and protection from enemies and inclement weather. But the benefits and long-life-conditions of the open are very important, too; a life of activity, bright, clear streams to bathe in, warm sunlight to bask in, chances to breed, and the strife of Nature, all are advantageous, especially to a liberty-loving animal like the grizzly.

I know of few other animals, except other bears, that will attack a black bear. Of our larger animals, none of the herbivorous animals have any reason to do so except in defense of their young or of their own lives, and then only the buffalo and the moose are big enough to make any impression. I have seen black bears kill elk calves when very small, and although the mothers did the best they could to drive off the marauder, they were actually helpless. Since the black bear was not a plains animal he did not come in contact with the plains buffalo, and I have no records of attacks on the mountain buffalo here in the Park, either calf or adult. The

moose with his powerful hoof blows can beat off and even kill a black bear, but so far as I know is never the aggressor in a fight. I doubt if a mountain lion and a bear ever came together, and if they did, I would be inclined to believe the bear's massive strength and thick hide would protect him from serious hurt. On the other hand, I doubt very much whether a black bear could catch and kill a lion. There are probably not enough gray wolves in the Park to ever menace a bear unless it was very young and caught away from trees.

The grizzly is the one great monarch of our forests and mountains, and as such he has no overlord, or even a serious rival. But if the adult grizzlies have established their supremacy by their matchless strength, great courage, keen intelligence, and resistless fighting prowess, their cubs are exposed to a whole retinue of enemies. Indeed, it seems as if every hand is against a cub that has lost its mother. Foxes, wolves, coyotes, wolverines, and fishers will kill very young cubs; I have no doubt that elk and even deer would kill them; and I know that mountain lions and black bears would. It seems as if every animal recognizes a grizzly cub as destined to become a forest monarch, and they all seize an opportunity to kill or worry him when they can. But each and every one is always very careful to make sure the mother grizzly is not about before they will venture to attack the cub.

There are sporadic instances of buffalo, cattle, and even horses attacking a grizzly, but ordinarily he would

have no difficulty in killing each of these species. It is quite probable that a moose in the full strength and glory of *his* fighting months, October and November, could successfully stand off, and perhaps kill, a grizzly. I have never seen, nor heard, of such a finish, but I believe it might be possible. Some of the Indians and our own pioneer hunters used to tell us that the cougar or mountain lion could kill a full-grown grizzly. But, while I have searched through much literature, I can find no authenticated instance. Personally I doubt these stories very much; it does not seem likely that the big cat could spring upon him and bite through his heavy hair and thick hide quick enough and far enough to cripple him before the big bear could get into action. In a fair and square set-to the mountain lion would have no chance against the grizzly, superior in every way except the peculiar lithe swiftness of the cat. That might carry its possessor out of danger of the grizzly's rush, but it could not avail before the bear's vastly greater weight and strength in actual battle.

But there is one natural enemy outside the Yellowstone country that might make even a grizzly quail, especially as that enemy would be fiercest and most aggressive when the bear's strength was at its lowest ebb, namely, the great, gray timber wolves of the north. As the long winter of those northern wilds draws to a close, these gaunt beasts are in large packs, often half starved and ravenous from unsuccessful hunting. At this season the grizzly would be just from his long,

© By J. E. Haynes, St. Paul

The mother and one cub were brown but all three had light brown noses

Photograph by M. P. Skinner

In October the fur of the black bear is at its best

Photograph by M. P. Skinner

This pair of grizzly twins stayed together for at least eight years

© Courtesy Roosevelt Wild Life Forest Exp. Sta.
Photograph by Edmund Heller

"Teddy" (formerly "Old Black Joe") had part of his ear torn off from fighting

weakening winter sleep with his strength further pulled down by poor foraging. Even at that, I have a notion the gray packs would hesitate before attacking a full-grown grizzly, for they well know that it would require a mass assault to overpower him by sheer force of numbers. Furthermore, it would be an assault in which many of them would be sure to be killed, and many more to be wounded. And it seems quite probable that if the quarry got his back against a rock or a big tree, he could bid defiance to any pack of wolves, formidable as it undoubtedly would be. Since to be successful, the bear must be caught weak and away from shelter by a numerous, bold, and ravening pack such a battle would not often occur even where the wolves are thickest. Here in the Yellowstone it is extremely unlikely. In the first place, the wolf packs are not big enough; in the second place, other game would be much easier to get and less costly to the wolves.

Although not likely to fall a victim to ordinary diseases and enemies, there are other accidents that occasionally happen. No animal could live the active, forceful life of a grizzly and not have them. Yet if the bear is not killed outright, his wounds, no matter how severe, are apt to heal with the licking and other crude but efficient care that the animal can give them. Only once in all my experience have I seen an injured grizzly beyond hope if left alone. And what do you think had injured that great monarch—a tin can! Yes, an ordinary, measly, insignificant little tin can! On the refuse

dumps, some of the cans, especially those that have held fruits or sugars prove very enticing to the bears. In walking over them, this old fellow had gotten his foot jammed squarely into one, and the rough edges of the tin prevented his getting it off. The more he raged and the harder he banged his foot, the tighter the can clung. For several days the poor old fellow limped and clamped about while the foot swelled tighter and tighter into the can. Then the Park authorities took a hand. The beast was lassoed and securely tied, and the pestiferous trap cut off with an ordinary can opener. On its removal, the foot was found badly swollen and infected; the pus was lanced out, a simple antiseptic applied, and the bear released after allowing the stuff a few minutes to act. It was a bad, angry looking foot, but the bear made off and eventually recovered. I wish I had another Androcles and the lion tale to repeat, but I never heard that this grizzly showed any particular gratitude; although his good temper soon returned and he was never again as cross as he was during the time the can stuck to his foot.

There is some danger to both black bears and grizzlies in the forest fires that sometimes sweep through our forests. Not that the fires catch and destroy any bears, for these intelligent animals are keen enough to avoid the actual roaring flames. But their food is destroyed and they are driven from their favorite homes into others not so well adapted to their wants. It is even conceivable that fires in the Park might drive the bears outside

only to meet their doom by trap and rifle. Lightning sometimes sets fire to our trees and starts a forest fire. I have even seen bears dodge and whimper when the lightning flashed and the thunder crashed through the forests, as though they recognized it for a dangerous enemy. But it is likely that there is a simpler explanation in that the sudden, sharp claps of thunder hurt their eardrums.

CHAPTER IX

WHAT BEARS LOOK LIKE

THERE are only two kinds of bears in the Yellowstone National Park — the black bear and the grizzly. But both are present in several different colors with all manner of gradation from one color into another. In a general way all the black bears, the brown bears, the cinnamon bears, and the yellow bears in the Park belong under the general name "American Black Bear." The different colors amount simply to the difference between the blonde and brunette members of the same species. And the same is true of the dark gray — almost black — bears, the gray bears, the variegated gray bears, and the golden gray bears, for all are of the species known as "Grizzly." The names: "Baldface," "Silvertip," "Roachback," "Old Eph," and "Moccasin Joe" are all applied to grizzlies. Again, the different colors in the case of the grizzly are merely the difference between the light and dark members of the same species. But the difference between black bears and grizzlies is the difference between two species — different in habits, structure, and characteristics as well as in color. But this general separation of the two bears by color is true only of the Yellowstone; because outside the Park practically every color of the black bear is duplicated in the grizzlies.

When our ancestors landed on the coasts of Virginia and New England, they soon came in contact with the bears of our eastern forests. These were mostly black in color and all were so much darker than the yellowish-brown bears that the settlers had known in Europe, that they quite naturally called these new bears "Black Bears." Since then the name has persisted and been carried west until now it is used for our Yellowstone Park bears, although here only slightly less than half the species are really black.

Frankly, I do not know just where the grizzly's name came from. Probably it is a translation of an Indian name meaning either savage or grayish. The first writer who refers to this bear, Umfreville, speaks of the "grizzle bear," which evidently refers to its color. Still there are two words used by different authorities similar in sound and spelling, although their meaning and derivation is very different. One is "grisly" meaning savage-looking, fear-inspiring, terrible, or horrid; the other is "grizzly" meaning grayish or somewhat gray in color. Sir Alexander MacKenzie, after Umfreville, used "grisly." Lewis and Clark were much more apt to call this bear the "brown" or "white" bear, and where they did use "grizzly" it was always in conjunction with other adjectives meaning color as: "the brown, grizzly, or white bear, all of which seem to be of the same family, which assumes these colors at different seasons of the year"; "the first of which was large, fat, and of a bay color, the second, meager, grizzly, and of smaller

size"; "of a black, grizzly, brown, or red color." It would seem, therefore, that Lewis and Clark themselves used "grizzly" and meant it as descriptive of color. But George Ord, who formally named and described this bear, gave it the scientific name of *Ursus horribilis* which clearly refers to the bear's supposed disposition and not to its color. But at the present time, "Grizzly" has been adopted by practically all authorities, although a few use "silvertip" which refers to the same peculiarity of color.

The grizzly varies so much in color that he is recognized more by form, general shape, motions, and other striking characteristics. Not only do these bears differ from each other, but individual bears show varying amounts of color on different parts of their bodies. In general, the bears that show more than one shade are lightest about the face from a preponderance of gray there. In many cases, however, the bears have longer, shaggier hairs about their shoulders that would give them the same preponderance of silver there. Grizzlies show all shades of color ranging from almost black to "white," really a light cream tint, and the silvering differs from a slight frosting on the tips of the hairs to fur grayed two-thirds of its depth from its outer ends. Jet-black bears of the grizzly species are very rare, indeed, anywhere; personally I have never seen one and can find no records thereof. Similarly a snow-white bear would be a *rara avis,* "white" bears being usually of a cream color, although sometimes so light a shade

as to look white unless seen against a snow background. So great is the variation in our Yellowstone Park grizzlies that we seldom see two bears of the same shade; and, furthermore, the shade and amount of silvering changes with sex, season, age, and condition of the bearer. Naturally, with silver-tipped bears, it makes a difference whether the hair is long as in spring, or short as in late summer, and whether the hair is allowed to lie smooth or is erected by the muscles underneath. Evidently the color and shading is not due to heredity—unless we consider that all the colors are more or less dormant in the parents—for I have repeatedly noted that variation *is the rule* in the same litter of cubs, so much so that it is the exception for any cub to be like any of its brothers and sisters or its mother. In 1922, I found a good many grizzly bears more or less whitish about the head, changing to yellowish on the neck and golden on the shoulders, and then graduating into yellow-brown in the rear, the whole fur overlaid with silvery tipping, heaviest on the face and shoulders. These were known in local parlance as "saddleback bears" because the lighter shoulders suggested the bears had saddles on them.

One grizzly family attracted my special attention, first because the mother was so fussily watchful and so nervously cautious. Indeed, it seemed as if her concern for her three cubs was so excessive that she, herself, got very little to eat. It was in late September when I saw her last and even then she was still long, lank, and

so rangy as to show no signs of fattening before hibernation; but her cubs were sleek, fat, playful little fellows and a delight to the eye. She was brown in color with very little silvering; one of the cubs was almost black with a slight uniform grayish shading, one of his playmates was yellow-brown with gray outlining his face and then extending back over neck, shoulders, and body to his tail in gradually lessening amount, the third cub was a beautiful golden yellow, lighter on the face and shoulders, and his fur so heavily frosted with gray that it fairly seemed to quiver and ripple in waves as the youngster hurried along. In many cases, I have found this rippling sheen of silver, covering older grizzlies with a royal robe of wild, majestic beauty. No other animals that I know of approach these wonderful bears in sheer loveliness, and not even the most brilliant of our birds can take the scepter of supreme beauty from one of these glorious wilderness monarchs, the finest of their race.

But why there should be such a great variation in the cubs, and why there should be so great a difference in the adults over so large a habitat? It is impossible to say. Some authorities believe that it might be a characteristic of a race of animals in the making — still subject to all sorts of variations and not yet settled into the final color that ought to prevail eventually.

As I have already said, the color of the black bears varies considerably with different individuals. I have never seen a white or cream-colored bear in the Yellow-

Photo by Miss Dina Rees Evans

The simplest form of the white breast mark

stone, but I have seen yellow bears so light in color as to be the color of tow. From this tow color the bears vary through all the shades of yellow and brown to pure black. In ten years I have seen 228 black bears to 241 of lighter shade. Where I have been able to distinguish the sex, the larger number of females have been brown, and the males black; but this may be only a coincidence and not true of the whole bear population. There is no judging the color of the offspring by that of the parents, for the cubs may be of three or four colors, and some or all may differ from the parents. But whatever color a black bear may be, it is the same color throughout except possibly on the nose and breast.

While the larger proportion of the black bears have brown, light brown, or even straw-colored noses, I have never seen a brown or a yellow bear with a black nose. Indeed, I can go farther and say I have never seen a bear with a nose darker in color than that of his body. But about one in every ten of Yellowstone's black and brown bears has white breast markings. In its simplest form, this mark is a broad splash of white, sometimes as much as eight inches in diameter. Often it takes the form of a broad V with the angle-point forward, and the diverging lines varying from mere lines to bands an inch or two broad. Occasionally other figures are seen and then the lines may be straight, curved, or irregular. Perhaps the most striking of all is a broad circle an inch wide and six inches outer diameter with a black four-inch center.

In addition to all these variations, the color problem of black bears is found to be complicated by the season of the year and by the age of the wearer. Bears, especially the lighter browns, are quite sure to fade out towards spring and early summer before shedding the old winter coat; the new fur appearing underneath being decidedly darker. In the same way, cubs, when they lose their baby fur, may become darker during the first autumn and even change from brown to black. I have even known yearling bears to change from brown to black at the annual summer shedding time. All the adult bears are heavily covered with fur when they come out of the long winter sleep. For a time they retain this warm overcoat, but it is shed during June and early July. Usually it comes out evenly, but sometimes in irregular patches giving its wearer a very shabby, moth-eaten appearance. On the other hand, the new fur starts evenly and slowly and soon covers its owner with a beautiful, soft, even, glossy, new coat, very noticeable in September. After that month the fur grows gradually longer and longer until the bear is well protected by retiring time.

After making proper allowance for all these seeming irregularities, the average specimen of American Black Bears will be found to be a glossy, smooth-coated black or brown bear with a tan or brown muzzle; short, black, curved claws not capable of being withdrawn like a cat's; teeth, some sharp cutters and some broad grinders, indicating the bears' mixed flesh and vegetable diet;

ears, small, erect, and almost hidden, but still very keen to detect the slightest sound and the tail short and almost non-existent; in fact, a well-shaped and goodly proportioned animal averaging about five feet in length over all, and twenty-five inches high at the shoulders.

The grizzlies vary almost as much as the black bears, but all that I have seen in the Yellowstone have always shown the grayish tips of the pelage that probably earned them their name of grizzly. But this overshading varies greatly in amount and distribution. Unfortunately, there is no average color; no one color more often met with than another. Having failed to establish any definite coloration, you may justly wonder what are the distinguishing marks. You will want to know, when you meet a bear in the woods, whether to climb the nearest tree, or try the power of the human eye about which we have all heard about so much. And, by the way, as Mr. Ernest Thompson Seton expresses it: while *we* have all heard about that wonderful magnetic power, some of our bears are singularly remiss and do not appear to have been instructed on that point.

As I have already said, the fore claws are distinctive to the grizzlies. While they are proportionately slenderer than those of the black bear, they are much longer. Most descriptions speak of these claws as straight when compared with black bears; but this is comparative and there is actually a considerable curvature that we should bear in mind when speaking of their length. A claw that measures only three inches in a direct line from tip

to base will be found over four inches long when measured along its curvature. The habits and habitats of the individuals greatly influence the length of the claws at different seasons. Lazy individuals that do not travel so much give their claws a better chance to grow long. Those that dig much for bulbs, gophers, and woodchucks wear their claws down to mere stubs, while the fish and berry eaters are longer clawed again. As gophers and woodchucks predominate in certain parts of the Park, and trout and berries in another, the claw lengths vary also. Naturally claws grow while their owner is not using them and wear away when actively employed in hunting and digging. Most of the grizzly bears I have seen had fore claws from three to four inches long along the curve; but on the rear feet the claws are much shorter and more curved and do not differ markedly from the black bear equipment. A grizzly's claws are not adapted to climbing; but their long slender straightness is very useful for digging, for turning over logs and stones, and are invaluable for offense or defense, cutting like so many knives when driven by the massive shoulder muscles. Perhaps under such conditions they are even more effective than the sharper, more pointed, but shorter claws of the tiger and the lion. And, finally, the claws of the grizzlies are light in color, whereas the black bears' are black.

Like the black bear, the grizzly is *plantigrade;* that is, he walks with his whole foot to the ground and not on his toes like a dog or a cat. All bears, except the polar

bear, have naked soles, having no hair there even in cold weather. Aside from the claws, a bear's paws in front differ from those in the rear and the footprints are markedly different. A striking fact, yet one that some of our popular writers seem to have entirely overlooked. I remember a book by a well-known author that I picked up, that had many tracks of bears up and down the margins, but all were prints of hind feet. Apparently his bears always walked erect! Another book showed only prints of the fore paws, and I would give a good deal to see a bear walking always on his fore paws.

The bear's fore paw is short so that it looks as if only the toes and the ball of the foot touched the ground, whereas the rear foot is long and has a marked heel that gives a print a good deal like that of a large man in moccasins. The prints of the grizzly's foot differ from the black bear in that the claws usually show and are at a longer distance from the rest of the foot than in the case of the black bear if his claws showed at all. A grizzly's fore feet are proportionally larger and make deeper impressions than the black bear, but the rear feet of the latter are proportionally larger and heavier because a bigger proportion of the grizzly's weight is in his shoulders, whereas the black bear's weight is in the rear.

As for the animals themselves, the best way to tell a grizzly is the silvered coat if present, the high shoulders often accented by a grizzled mane that may stand erect, and the long light-colored fore claws. After you become

familiar with the two bears, the gait shows sure differences. The grizzly's gait is a hurrying shuffle, less awkward, more sliding, and covers the ground faster than the black bear. The grizzly is usually in more of a hurry, he wants to get where he is going; but at the same time, he is more cautious and more watchful, he is also more sure of himself and more confident. His very gait shows this disposition. He seems to say to all observers: "Well, here I am. I'm a grizzly. What are you going to do about it?" He is not a bluffer, like the black bear. He is not pugnacious, but he is self respecting. He knows what he wants to do, and he does it. Furthermore, this surety, this precision, shows so strongly in his movements that they stamp the bear at once as a grizzly.

A grizzly has a narrower forehead, longer jaws, a squarer muzzle than the black bear, and the profile is flatter, almost concave in fact. But, while these characteristics are marked and easy to see when specimens of the two species are together, they do not serve as identification when only one bear is before us. The black bear loves the forests; but even so, he is often seen out in open meadows and parks hunting for fresh grass, thistles, and roots of one kind and another. At times I have seen bears actually on the hot spring and geyser formations merely because they happened to be traveling that way and did not change their plans just because the formations intervened. I have even seen bears on the Canyon wall and once down at the very bottom of

the Yellowstone Canyon at the foot of the Lower Fall, a very strange, unaccountable place for a bear to be. The open ridges, often above timber line, offer great attractions in stones to overturn in search of ants, crickets, beetles, and mice.

Originally the grizzly differed from his smaller cousin in that he was often out in the open country while the black bear was a forest dweller and never far from trees. In those early days the "buffalo grizzly" was out on the open plains and even now, where comparatively undisturbed, the Yellowstone grizzly frequents the open valleys and the forest-free mountain parks and bald ridges above timber line. But he has mostly withdrawn to the mountain fastnesses where he roams over pretty much the same kind of ground as the black bear except, perhaps, at a little higher altitude. The grizzly likes shade and forest, although he can get along without them; he likes wild fruits, nuts, berries, and roots, and therefore a soil suitable for their growth is likely to have grizzlies. But then so does the black bear like these same kind of resorts.

In a general way, bears' habitats are dependent on the food they eat and as some kinds are procurable in all parts of the Park the black bears may be seen at any point. That food is the limiting feature is also true of the grizzly range; but they like a little different variety, and since their food is most abundant in the western and southern sections, that is where they will be found as a rule. Of course, both species will be more easily

seen near the hotels and camp grounds because they are least shy and most friendly there.

As their food changes with the changing seasons, the bear habitats change correspondingly. In the spring when the bears first leave their long winter sleep they search out the meadows and willow thickets where they eat a little grass and a few willow twigs, and perhaps catch a few small fish in the nearby stream. If they have denned high up, they will move down to lower altitudes where there is less snow and consequently more fresh vegetation, and where they are more apt to find the carcasses of winter-killed animals. At the lower altitudes they are able to find the first ants, beetles, and grubs that the returning warmth calls forth; and the warm slopes first released by frost, provide the earliest roots and bulbs. As the snow melts away at successively higher levels, the bears move back into the forests and farther up the mountains, eating the dead birds and animals uncovered by the snow and more roots and bulbs released by the retreating frost-line. A little later they are found where the bursting buds and fresh mountain herbs give them additional food. These resources provide them with food until mid-June, about the time the first tourists arrive; and then the bears begin to dig out mouse nests, and the supply of insects increases to summer abundance. By the first of July the kitchen scraps add their quota to the available food. Also the trout are spawning and some bears frequent the streams for fish. As summer advances the bears move back into the heavy

forests at the medium elevations between 7,000 and 8,500 feet above sea-level. In August, bruin resorts to the berry patches on warm hill slopes and the lower valleys, but some stay in the forests where the huckleberries ripen in quantities. All through the summer the bears have been overturning stones for mice and licking up the accumulations of chilled insects on the snow and miniature ice fields. But with the coming of fall the grizzlies turn their attention more and more to digging out the ground squirrels and fat woodchucks; and the black bears, also, dig out these rodents but are not so enthusiastic about it. As the snows begin to fall all the bears move lower and soon begin hunting their winter dens.

Individual bears vary so much in their tastes and habits and live in so many varied localities with their different food possibilities, that while the schedule just given is the usual one, there are many unexplainable variations from any rule that we might formulate. Taking it all in all, bears live their lives in pleasant places, ranging where the scenery is finest, through the flower bedecked meadows, out upon the cool heights in summer, and through the silent, cathedral forests where they are monarchs of all they survey. Even the grizzly, in spite of an undeserved reputation for ferocity and bloodthirstiness, in spite of huge bulk, and in spite of mighty muscles fitted to kill with a single blow, lives with surprisingly little turmoil and destruction to other wildwood folk. To be sure, other bears seem to respect, more or less, the immediate vicinity of a favored lair; but I can-

not convince myself that even the grizzly drives other bears out of his feeding range. I believe each one is tolerant of the others if the food supply is reasonably abundant. A grizzly may claim all of a carcass, and even fight for it if necessary, but I never could see more in that than a measure of self protection common to all Nature's children. I have seen far fewer fights between bears than between other animals; probably not one to twenty I have seen develop between elk, mountain sheep, and even deer.